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STUDIES in INTELLIGEN



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Nonsense and significance behind the international GNP numbers game.

THE 1961 STUDIES IN INTELLIGENCE AWARD

The *Studies*' annual award of \$500 for the most significant contribution to intelligence literature was divided in 1961 between []

[] printed in the fall issue. The editors found the competition in excellence among the 1961 contributions extremely close. Among the several others earnestly considered they distinguished two as particularly meritorious—

[] in the winter and spring issues respectively.

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RUBLES VERSUS DOLLARS

Rush V. Greenslade

In the hearings on the Soviet economy before the Congressional Joint Economic Committee in 1959, Morris Bornstein of the University of Michigan presented three comparisons of the U.S. and Soviet gross national products.¹ One of these priced both countries' goods and services in dollars, the second priced them both in rubles, and the third was the square root of the product (the geometric mean) of the other two. They showed, respectively, that in 1955 the Soviet GNP was 53% of ours when figured in dollars, 27% when figured in rubles, or 38% when these two were averaged geometrically. The procedure Bornstein used was identical with that used by intelligence analysts, and the data and results were essentially the same. Bornstein's paper was the first public revelation of any figure except the geometric mean.

The calculation comparing total Soviet and American production is done in response to the perennial question asked of intelligence, where does the Soviet economy stand in relation to ours? Comparing quantities of individual products—steel, coal, oil, electric power, cement, grain, tanks, aircraft—is necessary and more useful, but people still want an overall comparison, one that is comprehensive. Such comparisons of gross national products in dollar and in ruble prices have therefore been carried out as completely as possible. The geometric mean has been used as a "best" single-value answer.

When, however, two alternative calculations of what supposedly is the same thing differ so widely as by a factor of 2, the meaning and usefulness of the figures or their average are open to question. Since the Joint Economic Committee hearings the use of the geometric mean as a meaningful comparison has been challenged by both American and Soviet

¹ *Comparisons of the U.S. and Soviet Economies*, Joint Economic Committee of Congress, USGPO, 1959, Part II, p. 377-395.

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economists for quite different reasons. The object of this article is to set forth the main outlines of the very complex calculations underlying the comparisons, to make clear their conceptual basis, and to show what interpretations of the comparative ratios are consequently justifiable. It will explain why the dollar and ruble comparisons are not so good, and the geometric mean not nearly so bad, as critics have alleged.

Unit-of-Measure Bias

Comparison of two heterogeneous baskets of goods and services in aggregate requires that their contents be measured in a common unit. Standard economic procedure is to use money values as the unit of measure and to convert each basket of goods into a monetary equivalent by a set of prices. Each good or service in physical units (e.g., tons of coal) is multiplied by its price per unit (e.g., \$25) and the resulting values are added together. But what prices should be used—in an international comparison which country's prices, and analogously in computing growth of output from one period of time to another, which period's prices? The choice, as Mr. Bornstein's figures show, can be of major quantitative significance.

This now familiar impasse is referred to by economists as the index number problem. It is conceptually insoluble. It is also universal. It occurs unfailingly in any aggregative comparison between two economic complexes separated in time or space. Until a few years ago there were no international comparisons based on a detailed valuation of one country's product in another country's prices. Most international comparisons were derived simply by converting the total value of one country's product in its own prices into the currency of another country by the international exchange rate between the two. In 1954 the pioneering study of Gilbert and Kravis² presented detailed comparisons of U.S. production with that of the UK, West Germany, France, and Italy. The results showed that the foreign exchange rate conversions were quite misleading. They also showed that the index number problem was significant for all the countries studied.

² *An International Comparison of National Products and the Purchasing Power of Currencies*, Milton Gilbert and Irving B. Kravis, OEEC, Paris, 1954.

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The ratio of UK to U.S. GNP is significantly higher in U.S. prices than it is in UK prices. Here the difference is less than in the USSR/U.S. comparison; but in comparing U.S. production with that of Italy the difference between the two ratios is about as large as with the Soviet. So the difference between the ruble-valued comparison and the dollar-valued one cannot be attributed solely to the artificiality of Soviet prices.

The index number bias is also uniform in direction. In every case the ratio of country A's GNP to country B's GNP is larger when the products are valued at B's prices than when A's prices are used. This holds for the Western European countries as well as for the USSR. In each bilateral comparison with the United States, the ratio of the other country's GNP to ours is larger in dollars than in its own prices. The same systematic bias holds in comparisons over time. In 1954 prices U.S. GNP in 1955 is 216% of that in 1929; in 1929 prices it is 222%. A spectacular index number spread for time comparisons is found in measuring the growth of Soviet GNP: in 1926/27 prices the 1937 Soviet national product, as measured by Jazny and Grossman, was 198% of the 1928; in 1937 prices it was 150%.³

The economic explanation for the index number problem is fairly straightforward. The price of one kind of goods relative to that of other kinds varies from time to time and place to place. Given transport costs and barriers to trade, relative prices may differ greatly between countries. Everyone is familiar with differences like the following: wine is relatively cheap in France, while beer is relatively cheap in Germany; domestic servants are relatively cheaper in most foreign countries than in the United States; fuels, oil, coal, and natural gas are relatively much cheaper here than in Western Europe; meat is relatively very expensive in the Soviet Union but standard machine tools are relatively cheap. Relative prices differ between countries because of differences in taste, culture, and habits and also because of differences in natural resources, capital/labor ratios, stage of development, and other factors that affect the cost of production.

³ *Soviet Economic Growth*, Abram Bergson, ed., Row, Peterson & Co., 1953, p. 7.

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Patterns of output also vary between countries, and their variation is related to the price patterns. Specifically, each country tends to use and therefore to produce relatively more of the goods which are relatively cheap. This tendency accounts for the systematic direction of the index number bias. To clarify this point a numerical example may be helpful. Suppose two countries, F and G, produce only two commodities, wine and beer. The quantities produced and the prices in each country are shown below.

COUNTRY F		COUNTRY G	
Price per liter (Francs)	Output (million liters)	Price per liter (Marks)	Output (million liters)
Wine 2	10	2	5
Beer 3	3	1	10

Then the total value of output in the two countries can be computed in either country's prices:

	VALUE OF OUTPUT In million Francs		In million Marks	
	Country F	Country G	Country F	Country G
Wine	20	10	20	10
Beer	9	30	3	10
Total	29	40	23	20
Ratio F/G	72½%		115%	

In country F wine is cheap relative to beer and the population consumes relatively more wine, perhaps because the price is cheap; and the price is cheap because resources for producing wine are abundant. It is also possible that wine is cheap because the population likes wine and has concentrated on the technique of its production. In country G the wine-beer situation is reversed. Because of these inverse price and output patterns, country G's total output is greater than F's when measured in francs but smaller than F's when measured in its own currency.

If in this example one substitutes the United States and the USSR for F and G and consumer goods and investment/defense production for wine and beer respectively, it is easy to visualize how the U.S./Soviet index number discrepancy arises. In the United States consumer goods are relatively cheap and investment/defense goods relatively expensive, and our pattern of output favors consumer goods. In the USSR

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the situation is reversed. The ratio of Soviet to U.S. output is larger in dollars because U.S. prices are relatively higher for the goods the USSR produces in relatively large quantities. The pattern of output by major end uses is shown in market prices below.

COMPARISON OF SOVIET AND U.S. GNP FOR 1960 AT MARKET PRICES IN 1955 DOLLARS AND RUBLES

END USE	RUBLE COMPARISON			DOLLAR COMPARISON			GEO-METRIC AVERAGE
	USSR (billion rubles)	U.S. (billion rubles)	USSR as percent of U.S.	USSR (billion dollars)	U.S. (billion dollars)	USSR as percent of U.S.	
Consumption.....	1,172	4,700	24.9	143	315	45.4	33.6
Investment.....	447	514	87.0	102	78	130.8	106.7
Defense.....	156	162	96.3	39	38	103.0	99.6
Government administration.....	22	30	73.0	10	14	71.0	72.0
Gross national product.....	1,797	5,406	33.2	294	445	66.1	46.8

The index number problem derives from differences in patterns of output which in turn derive from differences in resources and in national preferences. The wider the divergence in patterns of output, the wider the index spread. Comparisons of developed with underdeveloped countries yield extremely large spreads between the two valuations simply because the patterns of output are so different.

Partisan Positions

As indicated earlier, this problem is insoluble. There is no ground for choosing between the two alternative valuations. A time-honored expedient has been followed in using their geometric average in public pronouncements.⁴ The compari-

⁴The geometric mean is used in preference to the arithmetic because economic growth and other changes in general proceed geometrically; that is, constant percentage increases describe the changes better than constant absolute increases. The geometric average of two numbers exceeds the smaller of the two by the same percentage as the larger exceeds the average.

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son the President made in his press conference of July 1961—that the Soviet GNP was 47% of ours in 1959—was the geometric average. This usage has been challenged by both Soviet and American economists. The Soviet economists have come out flatly for the dollar comparison, in which, of course, Soviet GNP is higher relative to ours. Interestingly enough, their justification is that in a planned socialist economy price does not have to correspond to value, i.e., real costs, and in fact does not in the Soviet Union. And therefore, they argue, the ruble valuation is meaningless.

The Soviet argument is specious. As the studies of Gilbert and Kravis show, the index number problem always occurs, and in general the more divergent the pattern of output the wider the spread between the two figures. The patterns of U.S. and Soviet production are very divergent indeed. We can estimate how much difference the irrationality of Soviet pricing does make in the ruble comparison. We can eliminate a considerable part (but by no means all) of the distortions in Soviet prices by converting market prices to the Western accounting concept of factor costs. Factor costs are calculated by subtracting from market prices any direct taxes included in them, like the Soviet turnover tax, and adding subsidies granted to the industries. The adjustment of Soviet prices to factor costs cannot be carried out in detail because detailed data on turnover tax rates by commodity are not available. Preliminary calculations, however, indicate that the use of factor costs would raise the Soviet GNP as a percentage of the U.S. in rubles by a few points but would not eliminate the bulk of the index number spread.⁵

Objections by American economists are more serious. Abraham Becker of Rand⁶ has argued that the average is meaningless and should be abandoned, that the ruble and dollar comparisons are equally correct measures of relative output and should be equally and impartially cited. The basis of his contention is that while the ruble and dollar comparisons are precisely defined by the two real price systems used

⁵ The ratio of 47% in 1959 used by the President incorporated an upward adjustment from market price ratio to allow for the effect of factor costs.

⁶ *World Politics*, p. 99, October 1960.

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in the calculations, the geometric average of the two does not correspond to any existent price system. Another position is taken by Francis Hoerber of the Stanford Research Institute, who votes for the dollar comparison.⁷ His argument, as nearly as I can tell, is simply that American prices are more familiar to Americans, who will therefore understand the dollar comparison better.

Both these positions impute more meaning to the comparisons than they can have. The GNP ratios have a broad, general, far from precise meaning, one which tends to disappear if you try to pin it down. Like a faintly fragrant flower, it can be apprehended by gentle inhalations, but an attempt to extract the scented oil and subject it to chemical analysis will ruin it altogether.⁸

Unknowns in the Equation

As background for a better appreciation of what the GNP index numbers mean let me outline some of the difficulties inherent in the data used to calculate them.

Procedurally, the conversion of Soviet product values to dollars and U.S. product values to rubles is carried out with ruble/dollar price ratios for individual goods and services. The ratios used, numbering a few hundred, are only a small sample of all prices in either economy. Each price ratio is applied to those sections of consumption, investment, defense, and government administration for which it is deemed to be representative: thus a man's suit, shirt, and pair of overalls are taken to be representative of the whole men's clothing category.

The small size of the price sample introduces a margin of uncertainty. Worse than that, it is limited to prices the USSR publishes, and it is therefore weakest in military hardware, construction, and custom-built equipment. And of course there can be no price ratios for the considerable number of both consumer and producer goods produced in the United States but not in the USSR. For many services, such

⁷ *Soviet Economic Potential, 1960-1970*, Francis P. Hoerber and Robert W. Campbell, Stanford Research Institute, 1961.

⁸ But we must reject on technical grounds any suggestion that the ratios be described as faintly fragrant numbers.

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as health, education, and government administration, the product itself, let alone the price, is indefinable. Here we use wage and salary ruble/dollar ratios, thus implicitly assuming that the services of one Russian doctor equal those of one American doctor, and similarly in the other service professions.

The measurements are inherently quantitative. The quality and specifications of each product in the price ratio sample are checked as carefully as possible: an average Russian men's suit is paired not with an average American suit but with one that appears comparable in quality, well below the American average. But this product-by-product comparability, even if it could be achieved with accuracy, would not take into account the vast difference in diversity and assortment in the two countries. There is no way to quantify these factors, but we know from observation and from Soviet statements that supplies of consumer goods of all kinds are badly balanced, some types being in very short supply and others in surplus and unsalable. Diversity and assortment problems are evident in the investment field as well; for example, the range and mix of agricultural equipment is poor by the Soviets' own admission. Nevertheless, if 100,000 agricultural tractors of a certain type are produced they are included in the measure of output, regardless whether there is a demand and economic use for that number of these tractors.

Another deficiency in the statistical procedure concerns the value of retail trade services, which is included in the value of the consumer goods compared. The goods themselves are kept comparable by matching the physical qualities of individual products, but there is no practical way of measuring the quantity or quality of retail service that goes along with the product. Thus a pound of ground beef is counted the same in the two countries even if in one it is accompanied by air conditioning, soft music, and quick service, in the other by clouds of flies, pungent odors, and interminable queuing.

It is hard to believe that these data deficiencies do not favor the USSR, making the dollar valuation of the Soviet product too large by some few percentage points. On the other hand, as we saw above, the use of ruble market prices rather than

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factor cost overstates the U.S. product in rubles. To what extent these two overstatements offset each other is impossible to say. For all these reasons, over and above the index number problem, the total GNP comparisons should be regarded as order of magnitude indicators and not as precise measures.

Rationale of the Mean

Let us now return to the meaning of the dollar and ruble valuations and their geometric average. The valuation of one country's output in its own or in another country's prices has a precise *statistical* meaning given it by the calculation procedure, i.e., the multiplication of commodities by a specified list of prices. Further, these prices are taken from an actual operating price system. But this is still far from an *economic* meaning. The price systems of the two countries subject to bilateral comparison are not the only possible scales of valuation; consider the possibility and desirability of multilateral international comparisons. If we were comparing the U.S., Soviet, and West German output there would be three price systems and three sets of ratios for the U.S./Soviet GNP. Each country added would add another set of comparative ratios. In what sense then is the dollar or ruble valuation uniquely "correct"?

In a precise economic sense none of the valuations are correct. Two production aggregates can be unambiguously compared only if they are made up of identical proportions of the different kinds of goods and services. The comparison of two GNP's with different proportions can be given meaning only by an assumption about the transferability of resources, the assumption, for example, that the United States can shift resources from the present pattern of output to any other one at prevailing dollar costs and prices. The dollar ratio of Soviet to U.S. GNP, 66% in 1960, would be unambiguously the measure of comparative output *if the US were to shift resources until its output had the same proportional pattern as the USSR's and if the 1960 dollar value of this output were unchanged*. Similarly, if the USSR were to shift resources in the opposite direction, leaving its ruble total unchanged, the ruble ratio, 33%, would be unambiguously correct. The two provisos are, of course, highly dubious assumptions. They

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imply that unit costs of production would remain constant at all levels of output for all products.

This argument leads to the main conclusions I wish to draw. First, the two comparisons could be described better as equally incorrect than as equally correct. Second, the geometric average of the two can be given a defined meaning by assumptions no more dubious, possibly much less so. The average ratio would be unambiguously correct if both countries could shift to an identical intermediate pattern of output, the value of each total output in the domestic currency remaining unchanged. The feasibility of such a shift is certainly not harder to conceive than a shift of either country entirely over to the other country's pattern. The geometric mean is a rough approximation to the comparison that would hold if the pattern of output in both countries were a mean between the present patterns. In this interpretation it is a far from precise but still useful figure indicative of the relative overall size of the two GNP's.

Elements of Challenge

The third conclusion is that the capability for shifting resources lies at the heart of these interpretations. The figures shed no light on this capability; they require, on the contrary, an arbitrary assumption about shifts in order to have meaning. Thus specific questions about capability cannot be answered. For example, how much could each country produce of a specified list of defense goods and services under full mobilization? One could not deduce an answer from either the ruble or dollar comparison, but only, if at all, from a detailed study of the mobilization potential of each economy, industry by industry. The output comparisons really tell us nothing about capabilities for producing alternative mixes and hence nothing very precise about relative output. When and if the USSR reaches a level of output measuring 103% of the U.S. in dollar prices and 57% in ruble prices, it will be impossible, and probably at that stage of the game irrelevant, to say whether these ratios mean that it has caught up with us.

If the aggregate GNP comparisons are so ambiguous, of what use are they? They have found a place in the propaganda battle between the Bloc and West, but their analytical

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usefulness is limited. The useful quantitative comparison between the U.S. and Soviet economies is not of total GNP but of its separate segments. The table on page 5 shows that although there is an index number discrepancy in the individual consumption, investment, and defense components of GNP, it is a smaller one. This is because the difference between the two countries in pattern of output for each individual end use is less than in their production patterns as a whole. A breakdown (as detailed as possible) of the two GNP's in both sets of prices reveals precisely the divergence in pattern of output which causes the index number problem in the total GNP comparison and at the same time is obscured by the aggregation. The comparisons by end use show also the relative price differences which accompany the differences in output patterns.

The point to be emphasized in conclusion is that overall GNP comparisons—dollar, ruble, or average—do not measure in any significant sense the USSR's economic challenge to the United States. It is the uses to which productive capacity is put that are significant. Soviet GNP in 1960 may be 33, 47, or 66 percent of ours, but Soviet defense expenditures are approximately equal to ours and investment for growth is also equal or perhaps a little larger than ours. There is no policy question that need hinge on the overall GNP comparison. There is much more pertinent information available to U.S. policy makers and also to the general public regarding Soviet economic performance, the structure of the economy, the uses of production, and the USSR's objectives, plans, and potentialities. In speeches by the Director of Central Intelligence and in many other ways it has been publicly reiterated that the Soviet economy, though significantly smaller than the U.S. over all, is growing much faster, particularly in heavy industry; that its production is concentrated along ominous lines—investment for more growth, armaments, and the development of new military technology; that its efforts in these fields are already comparable in magnitude to our own; that it is devoting its resources with all the power of a determined dictatorship to a long-run aim declared in Khrushchev's promise, "We will bury you."

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Ramified process of determining the characteristics of a new model displayed at a Soviet air show.

ESTIMATING AIRCRAFT PERFORMANCE

Isadore Herman

When the Soviet Union unveils an airplane of new design, as it did in some numbers at its air show last July, the U.S. Air Force has an immediate requirement for an estimate of the machine's performance characteristics in order to assess its place and contribution in the complex of Soviet air power. Such an estimate can be made with good reliability if a few photographs of the plane have been taken from the ground. The task begins with the photogrammetrist and the photo interpreter.

Drawings to Scale

The first job—and it is not a simple one—is to transmute the photographs into a three- or six-view drawing properly dimensioned. It is the photogrammetrist who makes the calculations for these drawings. He begins by determining the true shape of the aircraft and the proportion its dimensions bear to each other. Absolute values, the scale of the drawing, can come later. A preliminary step is to get correction factors for any distortion in the photography due to the camera itself. These should be readily available; all attaché cameras are checked and calibrated before being sent out to the field. The proportional drawing then becomes an optics problem to be solved by descriptive geometry and spherical trigonometry.

If a rectangular block is photographed from an angle, the lengths of the three sides on the image do not bear their true proportions to one another and the angles are not right angles. Knowing that the three sides are actually at right angles, however, we can calculate what attitudes the block could have been in to produce this image and what the apparent proportion of the sides to one another would be at various look angles. If we had several photographs of the

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block from different angles, we could plot each of these look angles as a function of the apparent proportions of the sides in each. The intersection of these lines, since they all refer to the same block, would be the point which defined the true proportion of the sides to one another. (See Figure 1.)

An airplane has some of the geometric regularities of a rectangular block and one of the methods used to find its proportions is similar to this. A line drawn between the two wing tips of any plane must be perpendicular to the center line of the fuselage and the wing tips must be equidistant from this center line. The tail must be perpendicular in the third dimension. By measuring the apparent length, wing span, angle between the line connecting wing tips and the center line, and tail height, the photogrammetrist can determine their true proportions as though they formed a block. Then, using this true ratio of length to span and height to span, he can work the equation backwards for any one photo-

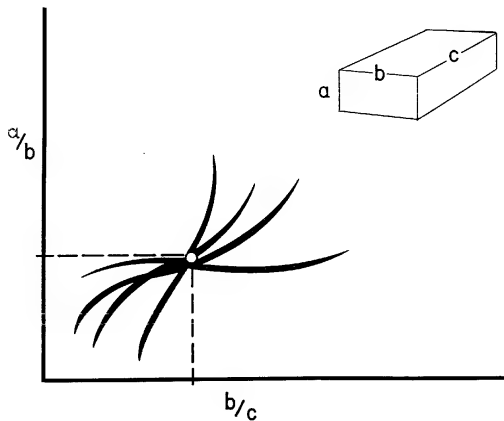


FIGURE 1

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GEOMETRICAL ROLL-OUT

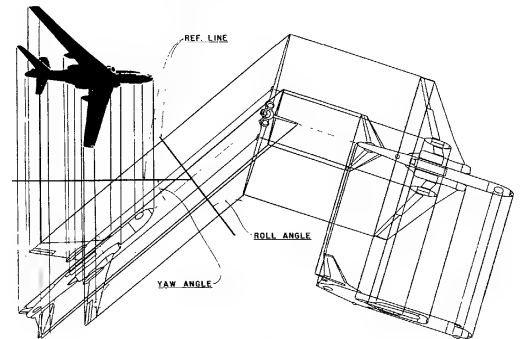


FIGURE 2

graph and calculate what the roll, pitch, and yaw of the airplane had been with respect to the camera plate. (See Figure 2.)

This data is furnished to the photo interpreter, who rectifies the aspect of the photographic image and produces the required three-view proportional drawing. The photo interpreter here really wears two heads. He must use his knowledge as a photo interpreter to find and reproduce visible features of the airplane; but he must also use his ingenuity as an illustrator to fill in the areas that are not seen so that they will be properly portrayed. In reconstructing these unseen areas, there is an important interplay between the photo interpreter and subject analysts expert in aircraft components.

The next problem is that of scaling the drawing, of determining the absolute dimensions of the aircraft. If we know the exact range from which the photograph was taken—most likely if the plane was not in flight—we can calculate the scale directly

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as the quotient of the camera's focal length by the range.¹ In the absence of this information we must rely either on known aircraft or other objects also in the picture or on features recognized from earlier models—such things as turret blisters, radar domes, and antennae—assuming that they are still the same size. Analysts may have documentary data containing clues to the size of external components, or material in the photo research file may help.

The three-view dimensional drawing is thus completed by personnel of the Foreign Technology Division of the Air Force Systems Command, which has central responsibility for estimating the performance characteristics of the aircraft. Many units of the FTD are involved in the performance estimates—the Aircraft Directorate, the Propulsion Directorate, the Engineering Analysis Directorate, the Electronics Directorate, and the Weapons and Industry Directorate. They include specialists in propulsion, preliminary design structures, aerodynamics, performance, weights, armament, and electronics. These are all represented on a task force assembled for the estimating project. The Aircraft Directorate, in particular, monitors the progress of the analysis. All contributing units are now given copies of the drawing.

Performance Factors

The Propulsion Directorate has the task of estimating the power available to the aircraft and the performance of its jet engine. They have from the drawing the exhaust port diameter and an inlet configuration and size. First they try to correlate these with some engine known to be available, but more often than not this is not possible. Then they take whatever background information there is, make some assumptions, and perform several analyses of alternative possibilities for the engine cycle to arrive at an initial estimate. This is a thrust-velocity curve for sea level and one for some altitude such as 35,000 feet. (See Figure 3.)

The weight analyst meanwhile is estimating the take-off gross weight of the airplane and breaking it down into fuel, structure, landing gear, tail, wings, etc. The method is es-

¹ See Kenneth E. Bofrone's "Intelligence Photography" in *Studies* V 2, p. 9 ff.

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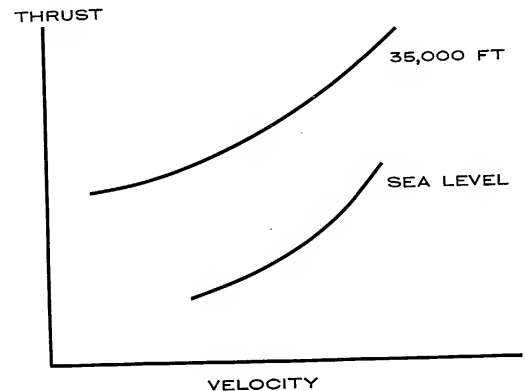


FIGURE 3

entially the same as that used in industry for preliminary design, approximating the component weights that have been empirically determined to correspond to such-and-such dimensions, volumes, velocities, etc. For example, the weight of a wing is a function of its dimensions, its structural material and design, the speed regime for which it is intended, and the weight of the airplane. The trick, supposing that we can get values for these factors from our photographs, is to formulate the precise relationship among them.² Weight engineers have devised complex formulae which vary with the manufacturer, one for an aircraft built by Douglas, for example, and a different one for a Boeing airplane. It is our aim to find the formula that applies in the USSR and ultimately its variations for individual design bureaus in the USSR. In this we still have a long way to go.

² For a more specific illustration of this and some of the other methods used in a narrow application of performance analysis, see Theodore A. George's "The Calculation of Soviet Helicopter Performance" in *Studies* III 4, p. 43 ff.

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Aircraft Performance

The structures specialist, working from the three-view drawing and any supporting information on such things as rivet lines, determines the structural layout of the airplane. This serves two purposes: it helps production analysts reconstruct how the aircraft was built up and it provides a check by limited stress analysis on whether the structural limits of the airplane are exceeded by the performance estimated. No complete stress analysis is run.

The layout specialist prepares an inboard profile, laying out the equipment, fuel, engines, etc., in the skeleton of the three-view drawing in functionally correct arrangement and providing accommodation for the volume of fuel estimated by the weight analyst. The layout is also used in deriving the weight distribution and balance of the plane.

Armament, electronic, and equipment specialists use the dimensional data of the drawings along with features identified in the photographs to reconstruct the armament, electronic, and other component systems used in the plane. These are not necessarily of importance in determining the performance of the airplane itself, but they are later used by weapons systems analysts when they evaluate its operational effectiveness.

The aerodynamics specialists determine the drag and lift factors affecting the airplane's performance. Drag estimation for supersonic flow is complex, usually including skin friction drag, compressibility drag, wave drag, interference drag, and drag due to lift. Skin friction drag is a function of the area of the aircraft exposed to the airstream (the "wetted" area, in aerodynamic parlance). Compressibility drag is encountered when speed becomes sufficient to compress the air around the forward surfaces; it creates a sharp increase in total drag in the transonic region. Wave drag is a result of pressure distributions unique in supersonic flow. Interference drag is caused by the proximity of one component of the airplane to another; for example, an airplane with external tanks, because of the influence of the pressure distributions from the fuselage and wings on the tanks and vice versa, has a total drag greater than the sum of that for the clean airplane and that for the tanks in isolation. Drag due to lift in supersonic flow is similar to that in subsonic flow, but with an additional component. In supersonic flow the

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center of pressure is located halfway back along the wings (about 50 percent of wing chord, in technical language) rather than at the forward quarter (25 percent chord) as in subsonic, and there must be a trimming of the aircraft to compensate for this shift in center of pressure. The trim drag thus induced is the additional supersonic component of the drag due to lift.

The foregoing types of drag are only those arising in the external aerodynamics. Another type of drag is considered along with the engine performance problem. Called spillage or additive drag, it results from pressure differences around and just inside the lip of the engine air intake. It is of sufficient magnitude to require inclusion in estimates on supersonic aircraft.

The method of drag estimation used in FTD was chosen from among those used by several aircraft companies after determining which of them was most closely substantiated by wind tunnel and flight tests. But knowledge of high-speed aerodynamics is undergoing continual change as flight speeds go up, and methods of performance estimation are advancing accordingly. These advances are kept under constant study and FTD methods are revised and supplemented to keep them up to date.

In estimating lift, we are handicapped by the fact that exact wing profiles cannot usually be established from photographs. But measurements of thickness, aspect ratio, area dimensions, etc., enable us to select a typical airfoil approximating that of the airplane. Data obtained from the National Aeronautics and Space Administration on similar airfoils can then be used to construct lift coefficients.

Mission Performance

Now having data on weight, balance, stress limits, lift, and drag, we check the power required to fly the airplane through a regime of flight speeds against the initial estimate of engine performance prepared by the Propulsion Directorate. It is a question of deciding whether our reconstructed airplane and engine are compatible in combination or whether we should restudy the engine or the aerodynamics. There are several choices that can be made both in engine parameters and in type of engine. For example, if the tailpipe is large, it could

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be a high-thrust engine with relatively high specific fuel consumption or it could be a by-pass engine with much less thrust but lower specific fuel consumption. Decisions on such points as these are now made by the Aircraft Directorate project monitors on the basis of all intelligence available regarding the aircraft or the requirements it was designed to satisfy.

Once it has been decided that our engine-airplane combination makes sense, the propulsion specialist prepares detailed thrust and fuel flow curves as a function of velocity at a range of altitudes, and the aerodynamics specialist computes drag and lift coefficients as a function of velocity at these altitudes. These two sets of data, together with that on weight, are then turned over to the mission performance specialists in the Engineering Analysis Directorate.

The mission on which the plane's performance is to be estimated is divided into take-off run, climb to cruising altitude, cruise to combat point, combat, and finally cruise home and landing. Best climb performance for a jet aircraft is defined as that in which it reaches its desired cruising altitude in the minimum of time. In order to determine this for a particular airplane it is necessary to find the forward speed that yields the highest rate of climb at each of the whole range of altitudes, in composite the speed profile necessary for reaching the cruise altitude in the shortest period of time. In most flight-testing activities, this is achieved by what are commonly called "saw-tooth climb tests," in which the airplane is required to fly through an altitude span at various velocities and the speed at which the maximum rate of climb is achieved is then established as best for that altitude and weight.

We do essentially the same thing by calculations, comparing the thrust available with the thrust required for the various altitudes and weight conditions during the climb. When rate of climb is plotted as a function of velocity at a given altitude and weight, the top of the curve represents the speed for best climb and the point at which the curve crosses the axis is the maximum speed for that altitude. (See Figure 4.) To these results there must be applied an acceleration correction to account for velocity changes with altitude; this is taken care of in the computation.

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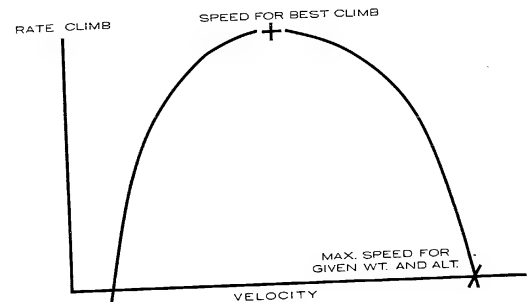


FIGURE 4

The power settings, altitudes, and speeds for cruise are the chief factors in determining the maximum radius or range for the airplane. The rules governing best performance during the cruise portion of the mission are important because the majority of the time in flight, at least for a bomber, is spent in cruise and the largest amount of fuel is used. In accordance with standard military specifications, a constant potential rate of climb is maintained during the cruise for the given weight condition, the variables being altitude and speed. In designing an optimum mission performance, we pick a potential rate of climb that will yield the maximum in nautical miles per pound of fuel. This is not necessarily at the highest altitude, as one might conclude at first glance from the fact that jet engines normally operate most efficiently with respect to fuel consumption at the highest altitudes.

The type of combat and the power setting used therein are important determinants of the amount of fuel consumed during the combat portion of the mission. As throughout the entire mission, the weight of the airplane is important, and we must take into consideration the amount of fuel burned at any point. The weight of the bomb or ammunition also needs to be considered.

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There is a great deal of variation in standard requirements for fuel reserves on landing. Normal military specifications call for a 30-minute flying time reserve, but also 5 percent of the initial fuel. If you take off with a 200,000-pound load, this means landing with 10,000 pounds of fuel. Such a reserve seems to us excessive in estimating the radius of a bomber, so we keep fuel for a 30-minute reserve endurance, but do not allow the 5 percent. The 30 minutes are flown at maximum endurance conditions at sea level and the number of engines operating is determined accordingly. For the BISON this meant two engines operating and two dead; when two engines were operated at high power, the specific fuel consumption was lowest and less fuel was required for the 30-minute period.

Computation

As must by now be evident, there is a great deal of computation required in preparing a performance estimate. To be more precise, over 250 engineer man-hours used to be expended on the performance estimate for one airplane. With the aid of automatic computers, however, it is now possible to obtain in less than an hour an amount of data that had previously taken about 180 man-hours. There are still 70 or 80 hours of engineering time required, but further research indicates that we may be able to reduce this residue materially.

Roughly similar to this process of aircraft evaluation is missile evaluation; but even for a cruise missile, the mission profile, the type of power plant, and the aerodynamics are slightly different. They are different again in the ballistic missile, where, however, automatic computers are particularly useful in performing the tedious integrations necessary in calculating the trajectory.

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Background on a sensitive overt source of information that has been publicly exposed in exploitation.

SCOOPING THE SOVIET PRESS

John Chandlee

At a midafternoon press conference on August 30, 1961, President Kennedy said that the American representative at the Geneva talks on a nuclear test ban would continue for another week his efforts to make progress with the Soviet delegation. But within minutes after the press conference was over, top U.S. officials were summoned to the White House for urgent consultation. The reason for the hasty meeting was soon revealed to the world through a statement read to assembled reporters: the U.S. Government had intercepted a transmission of the Soviet news agency TASS for the press and radio in Central Asia which indicated that the USSR had decided to resume the testing of nuclear weapons. In an otherwise routine "international review" not to be released by the regional press and radio before 0200 hours the next day Moscow time (7 p.m. of August 30 EDT), the newsmen were told, TASS had included the following observation:

The decision adopted by the Soviet Government on carrying out experimental explosions of nuclear weapons also serves the interests of strengthening the security of our country and other states of the socialist camp. These forced measures taken by the Soviet Government are inspired by a striving to safeguard a lasting peace and create an insuperable barrier to the unleashing of a new war.

This revealing comment, filed by TASS almost five hours before public announcement of the decision in order that the regional media might be prompt in attempting to shape public opinion, was the beginning of the USSR's massive propaganda effort to justify its new testing to its own people and to the world. That U.S. officials could also take advantage of the advance filing to prepare their own stand before Radio Moscow began its worldwide campaign was not accidental, but the re-

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sult of a regular watch on an internal TASS circuit maintained at Kyrenia, Cyprus, by Foreign Broadcast Information Service monitors. This circuit had provided a good deal of useful information since early 1960, and the gain realized in publicly exposing the operation must be weighed against the hazards therein to the source.

Monitoring Procedure

The circuit in question is a radioteletype transmission in Cyrillic characters, apparently a trunk line, carrying some 30,000 words a day from Moscow to the Soviet hinterland. The vast bulk of the copy is routine material more easily obtainable from TASS's international transmissions and Moscow broadcasts, some 60 percent international "news" reflecting the Soviet view of world events and 40 percent domestic propaganda like production pledges and achievements. There is a small service file providing guidance on how the material is to be handled, where it is to be printed, and so forth. But the special value of the channel lies in its prereleases—speeches, communiqués, notes, announcements, and commentaries "embargoed" for publication or broadcast until a stated future time.

The FBIS bureau on Cyprus has been able to monitor about 80 percent of the total file, the figure varying with reception conditions. Its mode of transmission demanded at the beginning the solution of certain technical problems such as the modification of twinplex teletype converters and the construction of teletype "baskets" to reproduce the Cyrillic alphabet. The twinplex circuit—one that carries two transmissions simultaneously—in this case carries the same material on both sides, one transmission lagging behind the other, as a backstop against garbling by bursts of interference. It has generally been necessary to monitor only one side of the circuit if fading and drift are overcome by careful tuning.

The material received is scanned at frequent intervals by the bureau's Russian linguists and items of significance selected in consultation with editorial supervisors. Of these an accurate English-language version is rapidly produced for transmission to Washington. When there is a development of major interest, Washington is alerted in a brief message transmitted over special radioteletype channels in a matter

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of seconds. Short informational summaries or excerpts of critical passages are sent first, followed by a complete textual translation when required. Occasionally the entire Russian-language staff must be mobilized to get an item processed quickly, and frequently the initial portions of a lengthy note or speech are in the hands of the interested officers in Washington before TASS has reached the end. The selection for processing is coordinated rapidly with the FBIS bureau in London, which receives material from BBC's monitoring of Moscow broadcasts and TASS international beams, in order to avoid duplication.

Value of the Take

On numerous occasions speeches written for subsequent delivery by Soviet leaders have been carried in advance over the TASS Cyrillic circuit. Khrushchev's speeches, for example, have sometimes been filed as much as 30 hours before actual delivery and thus made available to the intelligence community and policy offices at a substantial time advantage. A problem in utilizing the prerelease and a matter of interest to the propaganda analyst lies in the fact that TASS frequently transmits an extensive series of corrections to bring the advance text into line with the speech as delivered or sometimes to eliminate passages that may be sensitive.

An unusual departure from prereleased material occurred during Khrushchev's visit to France in March 1960. The circuit carried three speeches to be delivered by the Soviet premier, all embargoed "until further notice." As it turned out, one speech was delivered by Gromyko, and another was apparently discarded by Khrushchev out of displeasure with ungratifying aspects of his reception. Such cancellations could give us evidence of contemplated Soviet gambits that never materialize, and knowledge of unsurfaced instances of accommodation or stiffening in Soviet positions could be of considerable value to the analyst probing areas of Soviet flexibility or intransigence.

A frequent advantage of the monitoring of this internal press transmission is advance receipt of such materials as major diplomatic notes, which may be disseminated by TASS in clear text for release at a later date. During the Cuban affair of last April, a letter from Khrushchev warning Presi-

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dent Kennedy against taking a "highly dangerous road" was intercepted and delivered to the White House before it reached the President through normal channels.

The TASS service file, although constituting only a small segment of the circuit's traffic, is often revealing as to Soviet methods of manufacturing "public opinion." Domestic bureaus and republican press agencies are frequently told what is desired in the way of "reaction reports," as well as types of material "not desired." In May 1960, TASS asked for reaction reports on public meetings denouncing the U-2 flights. Just before Premier Khrushchev torpedoed the summit conference in Paris the same month, TASS carried numerous commentaries for use by the regional radio and press, but then suddenly advised recipients that "where possible, the various commentaries transmitted in connection with the summit conference are not recommended for publication." A major Soviet internal development was foreshadowed by a message that the celebration of the 40th anniversary of Soviet Armenia had been postponed, a fact not formally announced by Moscow for a number of days. Later a broad shakeup in the Armenian party organization occurred.

TASS instructions accompanying items serve to control the content of regional publications and broadcasts. Copy is generally preceded by a "flag" indicating what papers should use the material. The wordage is tailored to the level of the publication: republican papers, for example, received 325 words on a Khrushchev return to Moscow, territorial and regional (oblast) papers 245, and district, town, and komsomol papers 115. Some items are accompanied by instruction on what headline to use, for example "Interference of the United States in the Affairs of the Dominican Republic." An interesting sidelight is that when Khrushchev is scheduled to make a nationwide talk, the papers are told that the announcement is "not to be published on the front page or in a prominent place," apparently a reflection of efforts to hold down the "cult of personality."

Hazards to the Source

The monitoring operation, like all others in FBIS, is done overtly. Intercepts from Soviet internal circuits are distributed with the designation "Official Use Only" and not given

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to the press as much of the FBIS product is; but foreign nationals are used in processing them, and they are radioed in clear text to Washington. It is to be assumed that Soviet intelligence has long been aware, through monitoring if in no other way, that FBIS systematically intercepts and exploits this TASS circuit. Presumably the need for rapid, inexpensive dissemination of news and guidance to the regional press and radio has overshadowed any apprehension about its being tapped.

The U.S. scoop in being able to express dismay over the Soviet resumption of testing before Moscow could begin its own worldwide propaganda justification may, however, have brought the vulnerability of materials carried on the circuit dramatically to the attention of the top Soviet leaders and so occasioned a reexamination of press copy dissemination procedures. There are already tentative and inconclusive indications that practices have been modified: no important embargoed items have been intercepted since the White House announcement, and in one case only alternate takes of a story were carried on the circuit monitored. These anomalies may have occurred by chance, but additional equipment is being shipped to Kyrenia to check out the other half of the twinplex circuit and branch circuits that hitherto carried only duplicate material. If the Russians were sufficiently determined to avoid interception they could switch sensitive materials to landlines, VHF circuits, or more complex modes of radioteletype transmission that would make monitoring at least more difficult.

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*Features of the recent Soviet
psywar drive against U.S. intel-
ligence.*

TARGET: CIA

Lester Hajek

It is part of the job of opposing intelligence services to fight each other, and one means of carrying on this running battle is arranging publicity to discredit the adversary in his own country, among its allies and neutrals, and at home. Denigrating the opposing service at home serves to enhance the people's vigilance against the enemy and their support for the defending service (and more broadly as a convenient outlet for the instinct to portray the enemy as evil); exposing it among its allies and neutrals will make its liaison and its operations abroad more difficult; and discrediting it with its own people tends to undercut its freedom of action and its very base. Much the same picture of it can be painted for all these purposes if there are slight shifts in the lighting for different audiences: people in the opposing nation should be impressed with the ineffectiveness of their service, but not too much the people at home; the adversary's allies should especially be made aware of his treacherous spying on them.

It is not surprising, therefore, that Soviet propaganda and other psywar operations long since fixed on U.S. intelligence as one of their preferred targets. The main features of the bugaboo they wish to make its public image have been described in an earlier article.¹ During the past two or three years, however, and especially since the capture of U-2 pilot Powers and the failure of the Cuban invasion, the Soviet campaign has been intensified, has been focused more narrowly on CIA and a personal symbol of U.S. intelligence, Allen Dulles, and has scored some telling blows. It has had the advantage of being able to use the Western press while the Bloc press remains impervious to Western influence. The major Bloc

¹Leslie D. Weir's "Soviet Publicists Talk about U.S. Intelligence" in *Studies* IV 3, p. A19 ff.

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salvos have come in six openly published books or articles and three series of covert mailings since 1959.

The six publications include, in addition to three "white" propaganda productions issued in East Berlin and Moscow, three from ostensibly non-Communist sources—one by British member of parliament Bob Edwards and Kenneth Dunne, *A Study of a Master Spy (Allen Dulles)*,² one published in New York, Robert E. Light and Carl B. Marzani's *Cuba vs. the CIA*,³ and Fred J. Cook's *The CIA*, published as a special issue of *The Nation*.⁴ What distinguishes these latter three from the recent welter of more or less honest and spontaneous scapegoating of the CIA and marks them as deliberate components of the Soviet psywar campaign is the similarity of their arguments to those of the Bloc books and in particular their coordination in building up a distorted structure upon certain document fragments that could have been furnished, directly or indirectly, only by the Soviets.

The Hohenlohe Papers

Back in 1948 the Soviet Information Bureau published a booklet entitled *Falsifiers of History* portraying the USSR as the heroic vanquisher of fascism and the Western allies as conniving only to turn Hitler against the East. As one of many examples of this Western duplicity it cited "documents captured by the Soviet troops at the time of the defeat of Hitler Germany which . . . tell of negotiations which took place between representatives of the Governments of the U.S.A. and Germany in Switzerland in February 1943."

In these negotiations the U. S. A. was represented by a special delegate of the United States Government, Allen Dulles (brother of John Foster Dulles), who figured under the pseudonym "Bull" and had "direct instructions and authority from the White House." His partner on the German side was Prince M. Hohenlohe, a man closely connected with the ruling circles of Hitler Germany,

² Leicester Printers Ltd., Church Gate, Leicester, England. Published by Housmans Publishers & Booksellers and the Chemical Workers' Union: 5 Caledonian Road, Kings Cross, N.I. Introduction dated January 1961.

³ Marzani and Munsell, 1961. Marzani is the only one of the five authors known to be a Communist.

⁴ Vol. 192, No. 25, 24 June 1961.

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who acted as Hitler's representative under the assumed name of "Pauls." The document containing a summary of these negotiations belonged to the German Security Service (S.D.).

It is evident from this document, the conversation touched on important questions relating to Austria, Czechoslovakia, Poland, Rumania, and Hungary and, which is especially important, to the conclusion of peace with Germany.

In the course of the conversation A. Dulles (Bull) states that

"In the future, a situation will never again be permitted to arise where nations like the German would be compelled to resort to desperate experiments and heroism as a result of injustice and want. The German state must continue to exist as a factor of order and rehabilitation. The partition of Germany or the separation of Austria is out of the question."

Concerning Poland, Dulles (Bull) stated:

"... by extending Poland to the East and preserving Rumania and a strong Hungary the establishment of a cordon sanitaire against Bolshevism and Pan-Slavism must be supported."

The record of the conversation further says that:

"Mr. Bull more or less agrees to the political and industrial organization of Europe on the basis of large territories, on the assumption that a federated Greater Germany (similar to the U. S. A.), with the adjoining Danubian Confederation will constitute the best guarantee of order and rehabilitation in Central and Eastern Europe."

Dulles (Bull) also stated that he fully recognized the claim of German industry to the leading role in Europe.

It must be noted that this sounding was effected by the British and Americans without the knowledge or consent of their ally the Soviet Union, and that nothing was communicated to the Soviet Government concerning the result of it, even by way of post factum information.

This might warrant the assumption that the Governments of the U. S. A. and Great Britain had in this instance made an attempt to inaugurate negotiations with Hitler for a separate peace.

Clearly, such behaviour on the part of the Governments of Britain and the U. S. A. can only be regarded as an infringement of the most elementary duties and obligations of allies.

These documents, fragments of the supposed Hohenlohe report to the Sicherheitsdienst, are the seed which Bob Edwards, Carl Marzani, and Fred Cook will cooperate in bring

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ing to full flower in 1961. The Western writers will also reproduce the reasons adduced by *Falsifiers of History* for the U.S. Government's and Allen Dulles' solicitude about the future of Germany:

The role played by the American monopolies, headed by the du Pont, Morgan, Rockefeller, Lamont and other industrial baronial families, in financing German heavy industry and establishing the closest ties between American and German industry is well known. . . . The Schroeder bank . . . furnishes a typical example of the close interlocking of American and German, as well as British, capital. Allen Dulles, director of the J. Henry Schroeder Banking Corporation in New York, which represented the Schroeder interests in London, Cologne, and Hamburg, played a leading role in the affairs of this bank. An outstanding role in the New York branch of the Schroeder bank was played by the law firm of Sullivan and Cromwell, headed by John Foster Dulles . . . and closely connected with the Rockefeller world oil trust, Standard Oil, as well as with the Chase National, the biggest bank in America, which made enormous investments in German industry.

But first the East German and Soviet propagandists revive and nurture the story. In 1959 it reappears, already putting forth new shoots, in a chapter contributed to a German-language historical study⁵ by one Josef Hodic. Hodic has additional participants in the Dulles-Hohenlohe conversations on both sides. He does not name the other Sicherheitsdienst agents, but says that Mr. Dulles had a subordinate named Robert Taylor (cover name Mr. Roberts), an expert in European economics, who also dealt with the Nazi "emissaries." He says further that the Hohenlohe reports were accompanied by a cover letter over the signature of SS Hauptsturmfuehrer Ahrens forwarding them from one Sicherheitsdienst office to another.

Hodic weaves into his account references to the Schroeder bank, I.G. Farben, Vereinigten Stahlwerke, etc., as links between the U.S. representative and the Nazis. He says that Mr. Dulles told Hohenlohe it was errors in Nazi foreign policy

⁵ *Die Hintergruende des Muenchner Abkommens von 1938*, volume 2 of a series said to be prepared by a "Commission of Historians of East Germany and Czechoslovakia." Edited by Drs. Karl Obermann of Berlin and Josef Polisensky of Prague, published by Ruetten and Loening, Berlin. Hodic's contribution is headed "Die Fortsetzung der Politik von Muenchen durch die Westmaechte im Zweiten Weltkrieg."

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that had forced Great Britain and the United States to enter the war, and he continues with a new interpretive account:

The basis from which Dulles began the negotiation was that the next war would be conducted between the USA and her allies on one side and the Soviet Union on the other. The entire post-war order of Europe should be subordinated to this conception of the development of the world. From this position Dulles criticized fascist Germany's internal and external politics of recent times. . . . Because of a psychological error—which was mentioned many times—the German government caused the Anglo-Saxon powers to enter a state of preparedness for war, caused Great Britain to introduce general conscription, and caused the U. S. to turn away from her isolationist policies. . . .

From the beginning Roosevelt's special representative recognized the historical significance of Adolf Hitler. . . . Dulles declared that in principle he did not reject national socialism and its basic ideas and actions. For example, he indicated that the last Goebbels speech was a masterpiece and that he had read it with great satisfaction. . . . The guiding principle for the new order in Europe after the war must be the realization that the next war will be between the USA and the USSR. . . . Germany should not come out of the war weakened nor should people like the Germans be forced to desperate measures to overcome injustices and misery. Moreover, the German state must continue to exist as a factor of order and restoration. There could be no question of the division of Germany or the separation of Austria. A strong, federalized Germany with a neighboring Danube confederation could guarantee order and rejuvenation in Middle and Eastern Europe. Through the expansion of Poland towards the East, through the creation of a strong Hungary and a strong Rumania, a *cordon sanitaire* would be erected.

Dulles and Taylor ascribed only a limited importance to the Czechoslovakian question. Both of them visualized that some day a solution to this question within the framework of the Reich would be acceptable. . . .

Dulles . . . informed himself exhaustively on the question of whether there existed among the German bourgeoisie and German workers anarchistic or other nihilistic tendencies which would strive for a sovietization of Germany. . . . For Dulles there was no thought which was more unacceptable than that the Germans might enter discussions of any sort with the Soviet Union after the military catastrophe of 1943. Nothing disturbed him more than the possibility of the postwar expansion of the influence of the USSR in Europe or in the Middle East. Max Hohenlohe emphasized that Mr. Dulles, unlike the British, did not want under any conditions to see the Russians reach the Dardanelles or the oil areas of Rumania and the Middle East.

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Dulles and Taylor never missed an opportunity to emphasize that the discussion with Herr Hohenlohe and the other negotiators was a pleasure, for they had heard enough from the old bankrupt politicians, immigrants, and prejudiced Jews.

This elaboration, buried in the midst of other ponderous historical "scholarship," cannot be counted a major salvo in the anti-CIA campaign. But also in 1959 there was published in East Berlin a cheap, sensational paper-back with a female spy on its cover entitled *Allen's Gangsters in Action*, by Julius Mader,⁶ and containing, among other denigrations of the CIA, a further distorted version of the Hohenlohe episode as embellished by Hodic. Mader prints a facsimile of the purported cover letter signed by SS-Hauptsturmfuehrer Ahrens forwarding the Hohenlohe report to Sicherheitsdienst office VI D.⁷

Mader changes the identity of Mr. Dulles' "subordinate" and carries the solution of "the Czechoslovakian problem" to its logical conclusion:

Both of the American gentlemen (at the conference with the SS deputy, in addition to Dulles, was present Mr. Myron Taylor, a leading manager of the U.S. Steel Corporation—J.M.) could imagine, for example, that one day and finally a solution to Czechoslovakia *within the German Reich* [italics in original] could be acceptable. . . . The German state (in other words, the Hitlerian version thereof—J.M.) must remain as a factor of order and restoration; there could be no question of a division of Germany or a separation of Austria.

Mader treats the insidious influence of banking and big business, especially oil, as follows:

After 1926 we find him [Allen Dulles] a partner in the law office of Sullivan and Cromwell, established by his brother in 1911, which is situated in Wall Street, New York, and which, significantly,

⁶ Julius Mader, *Allen's Gangster in Aktion*, Berlin, Kongress-Verlag, 1959.

⁷ The Mader and Hodic versions had actually been anticipated, with journalistic promptness, by the Czech party daily, *Rude Pravo*, which in October 1958 carried a similar account, illustrated with a facsimile of the Ahrens letter and a photograph of nine lines of Hohenlohe report text.

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represents the interests of the Standard Oil Company, among others, on a contractual basis. Then followed years during which he exercised the following functions: director of the American Bank Note Co., member of the board of directors and of the research section of "Council on Foreign Relations" in New York. Together with his brother John Foster, five years his senior, Allen Dulles hastily snatched up several million dollars and all that belonged to the "top drawer" of "better" American society. The basis for his millions was sweat, but not his own.

The next year, 1960, saw the publication of an even more elaborate version of the Hohenlohe story in the *New Times* of Moscow.⁸ This eight-page article repeats all the main themes of the earlier versions and is the most complete of all, including a facsimile of the Ahrens letter and a photograph of five lines said to be from a Hohenlohe report.⁹ But there remained the task of winning credence for this material in the West by arranging for its publication from an ostensibly non-Communist source.

The British M. P. Bob Edwards and his co-author Kenneth Dunne met this requirement. In January 1961 Edwards writes:

Now let us analyse the famous negotiations that took place in Switzerland. For this purpose we shall have at our disposal three authentic documents comprising a record of the talks which Allen Dulles and his assistant held with the German emissaries Prince Maximilian Egon Hohenlohe and Dr. Schudekopf. These documents were written in April and belong to the files of the Department VI (Amt. [sic] VI) of the SS Reich Security Office.

Edwards does not tell how he came into possession of the "three authentic documents," nor does he print any facsimiles. But his account is detailed, spinning out all the main themes of the preceding versions and like them twisting investigative conversations that may have taken place between Mr. Dulles and German sources including Hohenlohe into official negotiations with Nazi "emissaries."

⁸ "Documents, on Allen Dulles's Secret Negotiations with the Nazis in 1943," *New Times*, published by Trud, Moscow, No. 27, July 19 1961. Prepared for the press by L. Bezmyensky and A. Leonidov.

⁹ From a different page than the nine lines reproduced by *Rude Pravo*.

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Mr. Dulles' representation of big business interests, however, is handled with greater restraint for the British audience:

He had little difficulty in obtaining a post in the highly respectable legal firm of Sullivan and Cromwell. This firm, with which old John Foster still had dealings, was one of the largest in Wall Street. Among the mighty concerns to which it gave legal advice were the Rockefellers themselves. Its ties with the Morgans were no less firmly established.

But Edwards is careful to mention the matter of oil. Besides repeating the passage from the earlier accounts in which Mr. Dulles "on no account wished to see the Russians at the Dardanelles or in the oil areas of Rumania or Asia Minor," he points out that

By 1926 . . . he had been placed in charge of Near East affairs at the State Department. This was an extremely busy post, for in the twenties the Near East was regarded with considerable interest by the United States. The Near East meant oil.

The British book now becomes the ostensible source for the two exposés published later in 1961 in the United States. In *Cuba Vs. the CIA*, Light/Marzani announce:

A British Member of Parliament, Mr. Robert Edwards, has obtained and published documents from the files of the SS Reich Security Office of conversations held between Dulles and a high SS official in February, 1943.

Note that the documents are now said to have been *published*, and that Hohenlohe, who according to the Ahrens facsimile was Sicherheitsdienst agent No. 144/7957, has become "a high SS official." There is no discussion of how Edwards acquired his mysterious documents.

Light/Marzani devote two pages to quotations and summaries from Edwards, stressing the theme of Mr. Dulles' anti-Semitism introduced in Hodic's reference to "prejudiced Jews" and making the now familiar references to big business and oil interests:

Dulles . . . became head of the Division for Near East affairs. . . . Near East means oil and during this period the battle between American and British oil companies took place with Rockefeller finally getting 25 per cent of the shares of Iraq Petroleum Co., Mellon's group of the Gulf Oil Corporation getting priority rights on the Bahrain Islands.

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In 1926 Dulles resigned from the State Department for a post in the powerful legal firm of Sullivan and Cromwell which had ties and dealings with Rockefeller and Morgan among other American corporations. Dulles' knowledge of oil stood him in good stead as evidenced quickly by the affair of the so-called "Barco Concession" in the oil fields of Colombia . . . [which] Colombian President Dr. Miguel Abadia Mendez denounced. The Morgan-Mellon group chose two experts on the art of putting pressure, both former State Department officials—Allen Dulles and Francis Loomis.

The culmination in this transformation from a 1948 tadpole hatched by the Soviet Information Bureau to a 1961 bullfrog croaking in a supposedly American pond appears in Fred J. Cook's *The CIA*. Except for a few changes in emphasis for the benefit of American readers, Cook follows the Edwards text, even to the chapter headings, almost to the point of plagiarism. A sample of his treatment:

The Near East, then as now, was a sensitive area, and for much the same reason—oil. British interests had had a hammerlock on the rich preserves of the entire Mediterranean basin and had tried to freeze out American rivals; but now such companies as Gulf and Standard Oil were no longer to be denied. The years during which Dulles headed the key Near Eastern Division were, as it so happened, the very years during which the Rockefeller interests in Standard Oil negotiated a foothold in the Iraq Petroleum Co., and the very years in which the Mellons of Gulf were laying the groundwork for valuable concessions in the Bahrain Islands. Both of these developments became public and official in 1927, the year after Dulles left the State Department to join the New York law firm of Sullivan and Cromwell. . . .

Just as Allen Dulles was quitting the State Department, Dr. Miguel Abadia-Mendez was elected President of Colombia. . . . He threatened to repudiate the Barco Concession Worried American oil barons . . . turned naturally to their legal brains. One such brain was Francis B. Loomis, a former State Department official; another, Allen W. Dulles. . . .

Dulles and his older brother, John Foster, . . . were partners in the firm of Sullivan and Cromwell; they represented the same clients and the same interests. . . . Most important among their varied interests, and claiming a major share of their attention, were some of Germany's greatest international cartels. . . . Outside Germany, the Schroeder financial empire stretched long and powerful tentacles. In England, it had J. H. Schroeder Ltd.; in the United States, the Schroeder Trust Company and the J. Henry Schroeder Corporations. Allen Dulles sat on the board of directors of both. . . .

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The Allen Dulles of 1918, of 1942-45, of 1947-48, seems the same man, with the same strong alliances to top-level Germans regardless of their ideology.

Cook makes a final important contribution to the development of the Hohenlohe fabrication. Whereas Edwards keeps very quiet about how he obtained his documents, Cook says he got them "from absolutely reliable sources in Bonn." Moreover, he attributes this claim to Edwards. (He says that Edwards acquired a number of documents, including the three dealing with Mr. Dulles and the SS, whereas Edwards claims a total of three.) The whole composite structure thus ostensibly rests now on an authentic Western original source.¹⁰

Now that the Cook piece has appeared in *The Nation*, the Communist propagandists are all set for their regular West to East replay.¹¹ The Bombay weekly *Blitz*, whose editor specializes in attacks on the United States and CIA, printed the following in its 15 July 1961 issue:

Blitz-readers have heard of the cloak and dagger of the CIA, the notorious American agency of espionage, subversion and aggression. Now they will read a terrible and terrifying exposure of this secret agency and its international crimes by Fred J. Cook, whose exposures have won him several important American press awards during the last three years.

And the next day, 16 July, *Izvestia* carried an article by V. Matveyev headed "The Nether Regions of Allen Dulles" and subtitled "Department for Overthrowing Governments and Imposing Puppet Regimes: Dollars Are Buying Diversionists and Provocateurs" which consisted of excerpts and paraphrases from the Cook article.

Portrait of a Monster

In tracing the development of the Hohenlohe legend to establish the direct line of descent that runs from the Soviet Information Bureau to Edwards, Marzani, and Cook, we have

¹⁰ On the cover of Edwards' book the title is superimposed upon the image of a 1940 French intelligence report that includes the phrase *Source: Bonne* ("Source: Good"). If pressed, Cook might argue that he mistook *Bonne* for Bonn.

¹¹ For examples of this standard procedure see Alma Fryxell's "Psywar by Forgery" in *Studies* V 1, p. 25 ff.

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seen illustrated some of the themes used in the recent campaign of defamation against CIA. One might summarize:

Allen Dulles is pro-German, friendly to fascism, and anti-Semitic. He owes primary allegiance to rich and powerful private commercial interests, and his CIA is the servant of big business.

Allusions to the ties between big business and U.S. intelligence, like other government functions, are of course common in the Bloc press and radio commentaries. At the time of Gomulka's coup in Poland, for example, it was said that Allen Dulles had a special reason for being interested in Poland: in private life he had been a lawyer for the "Harriman group," which at one time owned extensive natural resources and industrial enterprises in Upper Silesia. "This indicates what is behind the alleged anxiety of the two Dulles for Polish independence." (*Neues Deutschland*, 23 October 1956) Similarly, in reviewing "The Fruits of American Espionage

The United Fruit Company grabbed the lion's share of the U.S. victory in Guatemala. The Dulles brothers are principal shareholders in this company. (V. Cholakov in *Robotnichesko Delo* 23 March 1957.)

But in 1960 the Communist media seemed to become especially vehement in charging that U.S. intelligence was being perverted to the service of U.S. business:

The close and long association of Allen Dulles with the billionaire family, the Rockefellers, insured him for rapid advancement. . . . It cannot be said that Dulles has not been grateful to his patron. On the contrary, he is trying in every way to poison the international situation so that his masters may continue to make profits out of the armaments race. (*The Soviet International Affairs*, 17 May 1960.)

On 29 May 1960 the Peking NCNA named China as CIA's first major target because "this happened to be where Standard Oil suffered its greatest losses from revolution." And charging that CIA mobilized shock forces in 1953 to overthrow Iranian Premier Mossadegh, it suggested the reader "no that the Anglo-Iranian Oil Company, which Dulles was su couring, was a client of Sullivan and Cromwell."

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TASS reported thus the final Soviet version of the Hohenlohe story on 10 August 1960:

V. Chernow has contributed to the *New Times* magazine an article describing certain secrets of the office headed by Allen Dulles. He points out that the Central Intelligence office, whose activities reflect the will of the financial and industrial rulers of the United States, now represents the direct tool of the American monopolies in their violent all-out bid for world domination.

And on 25 August 1960 *Neues Deutschland* referred to

CIA, the espionage organization of Allen Dulles, the man who . . . represents the interests of the big American monopoly association, the Rockefeller trust.

A frightening conclusion often drawn or inferred from these charges forms another theme of the campaign, and indeed its dominant note. It is that

The U.S. intelligence service poses a direct menace to world peace. This theme can be illustrated in other contexts by somewhat parallel quotations from Fred Cook and from the third major white propaganda salvo, a Soviet compilation called *Caught in the Act: Facts about U.S. Espionage and Subversion Against the U.S.S.R.*¹²

From Caught in the Act:

The aggressive, provocative nature of U.S. intelligence calls for the constant and timely exposure of its machinations as dangerous to the cause of peace.

It is quite obvious that spy flights like these along the Soviet state frontiers, at a time when an accidental or wilful intrusion by a spy plane into Soviet air space may happen at any moment, are a threat to peace and a source of international tension.

The unmasking and stopping of the U.S. intelligence service's criminal provocations against the peace-loving peoples is a prime condition for guaranteeing durable peace.

From Cook:

Destructive as such incidents are to America's image, they do not menace the peace of the world like the more grandiose CIA endeavors that led directly to the crises of Quemoy and Matsu.

The Burmese crisis that all but turned friend into foe, the recent crises on Quemoy and Matsu, vividly illustrate the manner in which the secret and militant activities of CIA create for us a

¹² Published by the Soviet Information Bureau, Moscow, 1960.

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foreign policy all their own. They illustrate the way the CIA tail wags the American dog and how such wagging can quite easily plunge the whole animal—and all his brethren—into the most horrible of history's wars.

Our people do not understand that, even as our Presidents speak the actions of CIA frequently invest their words with every appearance of the most arrant hypocrisy. The Presidents speak peace; but the CIA overthrows regimes, plots internal sabotage and revolution, foists opium-growers on a friendly nation, directs military invasions, backs right-wing militarists. These are not the actions of a democratic, peace-loving nation devoted to the high ideals we profess. These are the actions of the Comintern in right-wing robes.

The last two quotations from Cook lead us into the first of some other thematic characteristics with which the Soviet psywar artists clothe their bogey-man. There are four themes:

CIA interferes with and even creates State Department and U.S. foreign policy. It tries unilaterally and secretly to overthrow legal governments.

CIA is perfidious and unprincipled. It spies on American friends as well as its foes.

CIA dominates and manipulates supposedly independent organizations, governmental as well as private. It misuses émigré groups and turns them into spy nests.

Despite the fact that it costs the U.S. taxpayer fantastically much, CIA is incompetent.

We shall look at each of these in turn.

Cloaked Policy Maker

The theme that CIA warps national foreign policy or makes its own policy is illustrated in the following passages from Bloc propaganda, including the major vehicles cited in the foregoing.

The job of the Office of National Estimates is to be the great falsifier in the world, so that U.S. policy can be warped. (*Alte Gangsters*)

Allen Dulles's separate policy . . . departs in many important details from official American policy. Systematically the Secret Service delivers incomplete or even false information to the government, only to exploit the actual lag of the U.S. by releasing to the public . . . reports . . . designed to further his aspirations for power. (Budapest *Pesti Hirlap*, 12 April 1960)

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This highly powerful organization headed by Allen Dulles is the most influential of all American espionage organizations today. This is no trifling matter in view of the fact that by now various intelligence organizations have all but assumed top-level political control. (Budapest *Magyar Nemzet*, 2 June 1960)

In our minds Mr. Allen Dulles has always been associated with Mr. John Foster Dulles, and not only because they have lived their fascinating lives almost side by side. Our anxiety is based on the fact that such a combination of two similarly minded brothers in two such posts (intelligence and diplomacy) automatically places a question mark against Mr. Allen Dulles's noble intention of having nothing to do with policy and supplying only hard facts. . . . Some people assert that Allen Dulles not only worked in close contact with John Foster but eventually began to conduct his own foreign policy. On January 28, 1960, the *Evening Star* stated that the C.I.A. was "beginning to make policies at home and abroad," and on June 6 the *Detroit Times* remarked that to a certain extent the C.I.A. was conducting "its own foreign policy." (Edwards/Dunn)

The world has evidence that the decision to send the American Sixth Fleet into Lebanon waters and land U.S. marines on Lebanon territory also came from Mr. Dulles. It has been described how in the early hours of the morning of July 14, 1958, he literally got everyone out of bed and forced them to authorize the intervention. (*ibid.*)

We cannot see that the C.I.A.'s "own foreign policy" has done America a lot of good. Mr. Dulles was not original. He was so taken up by brother John's political doctrine that he simply practised it in his own peculiar way. Even today, for instance, sharp-tongued Drew Pearson claims that America has two Secretaries of State. One is known as Allen Dulles. Pearson adds that the C.I.A. has harmed U.S. foreign policy on more than one occasion. We think Pearson is right. (*ibid.*)

On June 29, 1959, the *New York Times* printed . . . a report of the replies given by retired officers of the Foreign Service to a Foreign Relations Committee inquiry on American foreign policy. One high-ranking diplomat wrote: "Every senior officer of the Foreign Service has heard something of C.I.A.'s subversive efforts in foreign countries and probably most of them have some authentic information about C.I.A. operations of this nature in some particular case. Unfortunately, most of these activities appear to have been blundering affairs and most, if not all of them, seem to have resulted to the disadvantage of the United States and sometimes in terrible failure." The truth of these remarks is now obvious not only to former Foreign Service officials but to the whole world. The West is a laughing stock in the eyes of the East. (*ibid.*)

It is our profound conviction that in the next few years great political struggles will take place in our country to take American foreign policy out of the hands of the CIA, the Pentagon, the armaments corporations and the political diehards. . . . Despite Dulles's protestations to the contrary, the CIA under his direction has consistently edged into foreign policy and has acted again and again as if it were a government superimposed on a government (Light/Marzani)

It is characteristic that the Senate Sub-Committee [on National Policy Machinery] qualified the U.S. secret service as an instrument of national policy, emphasizing thereby that the task of the secret service was not only to collect intelligence but also to take direct hand in the conduct of state policy. (*Caught in the Act*)

It is significant that as the CIA became the headquarters of United States espionage and subversion, it acquired great influence in shaping United States foreign policy under the Eisenhower Administration. . . . Thus, the well-informed West-German journalist Joachim Joesten, in his book about the CIA . . . wrote that the United States Central Intelligence Agency has in the past decade left a peculiar imprint on the entire American foreign policy. The Central Intelligence Agency, its aims and methods, predominate in Washington today over all other offices, principles and traditions. (*ibid.*)

The United States intelligence establishment is provided with enormous funds, is vested with great powers, and has, in fact, become a body which often exerts decisive influence on the entire state policy of the United States. (*ibid.*)

In a basic sense, CIA made foreign policy and this (says the *New Republic*, for example) "was the natural end-result of a brief usurpation of power which took place, almost unnoticed, during those anomalous years when one Dulles ran the State Department and another the agency [emphasis added—L. & M.] . . . Since the death of Foster Dulles this usurpation has grown increasingly visible, and Cuba turned a searing spotlight on the phenomenon of a government which has come to have, in effect, two State Departments." Perhaps the most important consequence of the failure of the Cuban invasion is that for the first time the American people have had a glimpse of the sinister influence of the CIA foreign policy. (Light/Marzani)

Time and again, CIA has meddled actively in the internal affairs of foreign governments. And it is in this field that some of its most vaunted successes raise grave questions about the drift and intent of our foreign policy. . . . It is certainly questionable enough to have American foreign policy tugger and hauled all over the map by the super-secret activities of CIA cloak-and-dagger boys, operating free of any effective restraint or control. (Cook)

²² Reviewed in *Studies* II 4, p. 82 ff.

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The Hungarian Revolt of 1956. The CIA's role in promoting and encouraging this abortive and tragic uprising, which we were not prepared to support after we had instigated it, remains shrouded in top-level, cloak-and-dagger secrecy. It seems well established, however, that arms were smuggled into both Poland and Hungary, either by the CIA or its Gehlen collaborators. . . . More important than the unresolved issue of arms-smuggling . . . is still another unresolved matter—the responsibility of CIA in whipping up the Hungarian rebels to fanatic self-sacrifice in a hopeless cause. (ibid.)

One of the three series of covert mailings supporting the anti-CIA campaign was also devoted to this theme. It was a forgery based on a Senate Foreign Relations Committee pamphlet which made public the views of selected retired Foreign Service officers about U.S. foreign policy, views which Edwards/Dunne quote from the *New York Times* in one of the passages reproduced above. The pertinent section of the original pamphlet read as follows:

It is recommended that members of the Committee on Foreign Relations read Harry Howe Ransom, *Central Intelligence and National Security*, Harvard University Press, 1958.¹⁴ This is as authoritative a book on the CIA as is available. The author is an enthusiastic supporter of CIA but in spite of himself, he presents a frightening picture of an organization twice as big as the Department of State spending tremendous sums under little or no supervision and he questions its compatibility with the American democratic system. He speaks of "undercover political intrigue" and "backstage political action" and states that little reliable information exists as to the extent to which CIA has aided foreign rebellions. It is true that there is little accurate information available, but every senior officer of the Department of State and every senior officer of the Foreign Service has heard something of CIA's subversive efforts in foreign countries and probably most of them have some authentic information about CIA operations of this nature in some particular case. Unfortunately, most of these activities seem to have resulted to the disadvantage of the United States and sometimes in terrible failure.

Ransom says: "Perceptive students of public affairs visiting or working overseas often get the impression that CIA agents, and the intelligence operatives of other Government agencies, are operating in uncoordinated fashion in every dark alley, behind every bush, and often in each other's hair." Most diplomatic and consular officers abroad can vouch for the accuracy of this statement. The situation is exacerbated by the fact that in most diplomatic

¹⁴ Reviewed in *Studies* II 4, p. 79 ff.

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and consular establishments abroad espionage agents of the CIA are stationed masquerading as diplomatic and consular officers.

Ransom says again: ". . . certainly the scope of CIA operations is to a large extent self-determined . . . certainly the Congress has no voice as to how and where CIA is to function, other than prohibiting it to engage in domestic security activities. . . . The existence of a massive institution possessed of secret information and operating invisibly at home and abroad is a locus of power unchecked by the normal processes of democratic government."

It is recommended: (a) That if the subversive activities of CIA in foreign countries are to be continued at all they be carried out very, very rarely, be subjected to greater control than at present and be carried out more secretly and skillfully than at present; (b) That the espionage activities of CIA be no longer carried out from the protection of embassies, legations and consulates. And (c) That Congress exercise greater control over the activities of CIA.¹⁵

Beginning on 12 September 1960, the following forgery inspired by this document was mailed in thermofax copies to various foreign embassies in Washington and to employees of the Department of State and newspaper correspondents.

Honest workers of the Department of State and Foreign Service are deeply concerned over the tendency on the part of the Central Intelligence Agency to take over foreign policy functions from the State Department.

Our Department has already lost to CIA a great deal of its influence and control over U.S. foreign policy.

The CIA has burgeoned into an organization twice as big as the State Department spending tremendous sums under little or no supervision.

In most of our diplomatic and consular establishments abroad hundreds of espionage agents of the CIA are stationed masquerading as diplomatic or consular officers.

It is true that there is little accurate information . . . but every . . . officer of the Department of State and every . . . officer of the Foreign Service has heard something of CIA's subversive efforts in foreign countries and probably most of them have some authentic information about CIA operations . . . in some particular case. Unfortunately, most of these activities seem to have been blundering affairs and most, if not all of them, seem to have resulted to the disadvantage of the United States and sometimes in terrible failure.

¹⁵ *Study of United States Foreign Policy: Summary of Views of Retired Foreign Service Officers*, prepared for the Committee on Foreign Relations, United States Senate, printed by the GPO on 15 June 1959.

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This is what we propose:

- (a) That the espionage activities . . . be no longer carried out from the protection of U.S. embassies, legations and consulates.
- (b) That if the subversive activities of CIA in foreign countries are to be continued at all, they be carried out very, very rarely, be subjected to greater control than at present, and be carried out more skillfully and secretly than at present.
- (c) That Congress exercise greater control over the activities of CIA.

FOREIGN SERVICE EMPLOYEES AND OTHER AMERICANS
UNITED FOR SEPARATION OF FOREIGN POLICY
AND ESPIONAGE

About two-thirds of the letter was copied verbatim from the Senate document, but note the characteristic Communist phrase "Honest workers" in the part not copied. Note also the striking similarity in name between the ostensible sponsor and the genuine organization "Protestants and Other Americans United for the Separation of Church and State," a kind of plagiarism the Bloc psywar operators often use in creating a phantom organization. There are other indications of the origin of the document—that another recent Bloc forgery was similarly based upon materials released by the Senate Foreign Relations Committee,¹⁶ that it is a standard Communist tactic to surface forgeries through mailings to private individuals and newspaper correspondents, that it is frequent Bloc practice to use photocopies or thermofax in order to hamper technical analysis, and that the State Department stationery, complete with seal, here used was used also in a later series of mailings, as we shall see. Moreover, the envelopes used were made of low-grade paper normally exported from the United States, and the typewriter that made the master copy of the letter and addressed all the envelopes is a Remington Rand containing a style of type designed for Estonian writing and is probably the same machine that

¹⁶ See pages 29 and 42 of *Hearing before the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws of the Committee on the Judiciary: Testimony of Richard Helms, Assistant Director, Central Intelligence Agency*, June 2, 1961, U.S. Government Printing Office, Washington, D.C.

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typed a diplomatic note sent to Mr. Herter during his tenure as Secretary of State by the diplomatic representatives Estonia, Latvia, and Lithuania in Washington.

A sub-theme of the portrayal of CIA as undercover politician, one prominent in the Foreign Service Employees forgery, is that CIA meddles in foreign affairs by seeking clandestinely to overthrow legal governments. This facet is given particular attention in the following passages from the psywar salvos:

In early 1959, the Cambodian government forestalled a coup d'etat headed by the traitors Sam Sari and Dap Chkhoun. . . . T records of the plot trial published in the *Réalité Cambodgienne* October 1, 1959, disclosed that the Americans had a direct part in the matter." (*Caught in the Act*)

CIA agents played a big role in the overthrow of the Mossadeh government in Iran. . . . Shortly before the overthrow, the center was visited by Allen Dulles, allegedly on his vacation. . . . According to the American press, the CIA spent some nineteen million dollars to bribe the officers who were to perpetrate the plot. (*ibid.*)

The records convincingly proved that the American secret service in collaboration with the Baghdad Pact members was preparing a plot against the Syrian Republic. The conspirators sought to overthrow the legitimate Syrian government and to put dummy power in the country. (*ibid.*)

Of late the U.S. intelligence has been increasingly trying to organize espionage and subversion against the neutrals . . . try through plots to overthrow the lawfully elected governments of these countries and replace them with regimes that would side with the U.S.A. (*ibid.*)

It has been published and never denied that the CIA has subverted government after government, not stopping at the use of military force. The CIA role in overthrowing the Mossadeh government in Iran and the Arbenz government in Guatemala has been underlined in innumerable publications. A *Saturday Evening Post* article over four years ago declared that CIA agents had worked with Naguib and Nasser in the overthrow of King Farouk in 1952 and the responsible British *New Statesman* (May 12, 1961) flatly asserted that the CIA "disposed of Patrice Lumumba." There are persistent reports in France that CIA agents were involved in the generals' abortive revolt in Algeria. There are strong grounds for believing the CIA supported Chiang Kai-shek's defeated troops which retreated to Burma and set up bases there for hit-and-run

¹⁷ This "proof" was itself a forgery. See *Testimony of Richard Helms*, op. cit., p. 18.

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raids on China. This led to serious friction between the U.S. and Burma. (Light/Marzani)

Consider the case of Chiang's Burmese opium growers. In 1951, following the collapse of Chiang's regime on the mainland, several thousands of his followers fled across the Yunnan border into Northern Burma. American policy makers decided to arm and equip these Nationalist troops for a reinvasion of Yunnan Province. From Formosa, CIA allegedly masterminded the operation. Arms, munitions, supplies were airlifted into Burma, but despite this support, there is little evidence that Chiang's gallant warriors ever wreaked much damage on the Chinese Reds. Instead, the Nationalists discovered they could achieve the finer life more easily by growing opium, and a great number of them settled down in Northern Burma and proceeded to do just that.

The Burmese, a most unreasonable people, were not happy with this ideal, CIA-created situation. For some inexplicable reason, they seemed to resent the presence of this foreign army on their soil; and when Chiang's fighters, showing no regard for Burmese sovereignty, practically took over the state of Kengtung and established their own government, the Burmese actually filed a vigorous protest with the United States. As Charles Edmundson . . . wrote in *The Nation* (Nov. 7, 1957), the American Ambassador in Burma hadn't been let in on the secret of what the CIA and the Chinese Nationalists were up to. The Ambassador, William J. Sebald, therefore denied in perfect good faith that America had anything to do with supporting Chiang's guerrillas in Burma. Burmese Prime Minister U Nu knew better and became so incensed he suspended all U.S. Point Four activities and almost broke off relations entirely. Eventually, our own Ambassador resigned his post in protest against our own program, and American prestige throughout Southeast Asia sported a couple of very unlovely black eyes. (Cook)

When, hard on the heels of Cuba, the French generals in Algeria tried to overthrow Charles de Gaulle, we were confronted by all-but-official charges in the French press that CIA once more had egged on the militarists. M. Soustelle, at a luncheon in Washington last December 7, is said to have talked long and earnestly to CIA Deputy Director Richard Bissell, Jr., on the proposition that CIA de Gaulle's program in Algeria could lead only to communism. CIA is said to have been impressed; General Challe, who led the revolt, is said to have had several meetings with CIA agents; he is reported to have been given the impression that he would have the support of the United States. (*ibid.*)

The rumor Light/Marzani and Cook cite of the CIA instigation or backing of the Challe revolt was itself instituted and spread by Bloc propagandists¹⁸ as part of this campaign

¹⁸ See *Testimony of Richard Helms*, pp. 2-5.

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to picture CIA as seeking to overthrow legal governments through clandestine operations and more broadly as making U.S. policy instead of serving it. Cook also treats at some length and in similar free-wheeling style the Guatemalan coup and the overthrow of Mossadegh, and then concludes as follows:

The answer seems clear and unequivocal to anyone who will stir the record. It has been given in a number of places—in Germany, in Poland, in Hungary, in the Middle East. Behind most of the eruptions that in recent years have shaken the peace of the uncertain world, close examination will reveal the fine, scheming hand of CIA. And it will reveal, too, that CIA time and again stirred up the brush fires without any regard for the long-range consequences.

Treacherous Ally

The propaganda portrayal of CIA as perfidious and unprincipled, spying on friend and foe alike, is seen in the following passages:

The guiding principle of any coalition is an honorable attitude to one's allies, particularly in face of the enemy. Mr. Dulles allowed himself to violate this principle both in regard to Russia, which is understandable, knowing Dulles, and in regard to Britain, which is monstrous and incomprehensible. (Edwards/Dunne)

Now no one dared to believe that the American claim to leadership of the capitalistic camp, especially in . . . [espionage] can be guaranteed through "official" agreements. Whoever would be so naive to make that assumption would ignore the law of the wolf, who dominates everywhere under capitalistic circumstances. . . . Therefore the secret services of capitalistic countries—except for the CIA—have been in coordination against the socialist camp—work conspiratorially against each other, now as in the past. (*Allen's Gangster*)

The Wall Street Journal wrote in an editorial on February 8, 1957: " . . . And if we are keeping a weather-eye out only on count we don't like, we are extremely naive. We had better watch out for those who don't like us now and those who may not like us tomorrow." (*Caught in the Act*)

Active cooperation and joint action with its partners in espionage activities directed against the socialist countries by no means prevented the CIA from carrying on active intelligence work with regard to its own allies too. One is amazed by the cynicism with which the American secret service makes use of the opportunities and channels furnished by its allies for work against the Soviet Union for activities against these countries themselves.

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It is, of course, up to the U.S. allies themselves to decide whether or not to tolerate such an outrageous fact, for instance, as the deciphering of their state correspondence by the Americans. At any rate, according to the authoritative testimony of the former employees of the N.S.A., B. Mitchell and W. Martin, the fact remains that the Americans decipher the telegrams of more than 40 countries, their allies Turkey, Italy, and France included, making use for this purpose of electronics, their own agents in the cipher departments of their allies, and the sale of American cipher machines to the latter. (*ibid.*)

In Britain alone there are 4,000 American officials. Commanders of American bases must obviously practice a certain amount of counterespionage to protect their own security. But who can guarantee it is only counter-espionage? In Ransom's classical work on American Intelligence, the C.I.A. is blamed for not assessing the influence of General de Gaulle's advent to power on France's position in NATO. The logical conclusion is that the C.I.A. is employed to collect certain kinds of information in all countries of the Western world. We doubt whether this country [Great Britain] is an exception. (Edwards/Dunne)

But this portrayal has also been reinforced by another series of mailings, this time of authentic classified U.S. documents to Western newspapers. On 7 January 1961 *Rude Pravo* reported that two official U.S. directives urged U.S. military attachés abroad to maintain social relations with Soviet Bloc officials for the purposes of espionage and inducing defections, claiming to have "incomplete and fragmentary" but documentary proof that this was so. On 14 January photocopies of two documents were mailed to the *New York Times*' Paris office, to the London *Daily Express*, and to *Der Spiegel* in Hamburg. They were a forged one-page secret document on official stationery headed "Department of State Instruction 1052 No. CA 974 June 10, 1960. Subject: Defector Program among Soviet and Soviet Orbit Officialdom" and a genuine but superseded Department of the Army document dated 3 December 1956 and headed "Department of the Army Defector and Returnee Exploitation Program and Related Activities." They were accompanied by a cover letter signed "W.S.," who claimed to be a U.S. citizen unable to "sit idly by while responsible American officials engage in such despicable and dangerous plans of subversion."

Starting on 22 April 1961, W.S. sent from Paris a new cover letter and two new photocopy enclosures, both classified and

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authentic, to a wider range of newspapers. Additional recipients were the Copenhagen *Dagens Nyheter*, the *Manchester Guardian*, the Stockholm *Svenska Dagbladet*, and the Istanbul *Cumhuriyet*. W.S. explained that he was mailing the classified materials to newspapers because he was angry by the espionage conducted by "our intelligence service against our allies and friendly countries. These activities are not only unethical and dishonorable, but they undermine respect and confidence in America and endanger the solidarity of the free world." The enclosures were clippings from USAF Daily Intelligence Report and a Department of the Army Headquarters Daily Intelligence Bulletin. The photographs of all four documents had been enlarged to precisely the size of the locally-purchased envelopes used for the mailings, a technique that had characterized some earlier Soviet forgery campaigns.

Starting on 9 June 1961, W.S. mailed the April enclosure from Rome to most of the original recipients and ten other papers in Italy, France, Iran, Lebanon, and England. On the London *Daily Express* had reported the January mailing to its readers, and none of the papers had apparently used the April series. But now the London *Daily Herald* printed a story about these June mailings under the headline "Mystic Man Starts U.S. Security Scare," most of the other recipients followed suit, and a number of non-recipients picked it up. *Il Tempo* and *La Giustizia* in Rome alleged that the W.S. documents originated with CIA. Israel Epstein, former American turned Communist Chinese, on 16 June had in his possession in Geneva a copy of the W.S. story in *Combat* of that date, not normally available there before the next day, as he spent that afternoon and evening calling it to the attention of Western journalists.

Manipulator of Puppets

The Bloc campaign shows CIA dominating or manipulating supposedly independent private groups and government agencies. *Caught in the Act* pictures its hand in propaganda operations:

Official "white" propaganda is conducted by the [U.S.] Information Agency in direct contact with intelligence bodies. Many U.S. materials, whether radio broadcasts or newspaper articles, are

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pared from materials provided by the CIA. Hundreds of CIA employees are working abroad under the cover of USIA offices. . . . The CIA regularly provides the RFE with broadcasting material. It is the sole supplier of personnel to the RFE and other such establishments. Of the RFE's 2,000 employees there is not one who is not connected in one way or another with American intelligence.

In May 1961 TASS charged that CIA was using the Peace Corps for cover.¹⁰ Another facet of the manipulation theme is the charge that CIA abuses the emigration by forcing refugees to be spies:

Finally, the CIA sees a source of indispensable aid in the organizations and secret societies of emigrants. It has built them into nests for the support of espionage and stationed them in many countries. (*Allen's Gangsters*)

It is this charge that was supported by the third series of covert mailings. The American Committee for Liberation employed one Alexander Melbardis in Munich from early 1956 until February 1960, when he was dismissed for insubordination. Photocopies of working and administrative papers he had handled began to show up in the mails in late May 1960. A short note, typewritten in Russian with the signature *Gruppa emigrantov*, was sent to the I. G. Farben Building in Frankfurt am Main. It read as follows:

To the Gentlemen of American Intelligence:

Our group wishes to acquaint you with the attached documents. We do not hide our hatred of the representatives of Allen Dulles's office, these people who turn our lives into evil ways. We do not wish to barter our souls. Our goal is to carry on the struggle against your agents and provocateurs in our midst.

The characteristic technique of enlarging the photographed materials to exactly the right size for the envelopes was used also in this mailing. The enclosures were Melbardis letters, receipts for AmComLib payments, a summary report by Melbardis of refugee gossip about possible Soviet agents, and the like.

In June 1960 other Melbardis papers were mailed to a number of Russian émigrés in Germany and France, together with a letter signed *Zemlyaki* ("Fellow Countrymen") which

¹⁰ See *Testimony of Richard Helms*, p. 42.

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denounced American intelligence and the refugees who se it. Later mailings of Melbardis papers continued to go these and other émigré recipients; to date there have been twelve such mailings.

Costly Blunderer

The psychological warfare experts of the Soviet Bloc have shown a touching concern on the question of CIA's competence, a concern manifested in English-language material designed to convince the U.S. Government and public that CIA's exorbitant costliness is matched only by its appalling blundering:

In its efforts to collect espionage information about the Soviet Union, the American intelligence is meeting with one failure after another. . . . In the United States itself little value is put on results of the CIA's activities. . . . The poor "efficiency," if the complete fiasco of the U.S. Intelligence Service with respect to the Soviet Union can be proved by the fact that it failed in time to inform the American government of the Soviet scientific and technical achievements in rocketry. The American intelligence systematically misinforms the public and government of its country, to the real situation in the Soviet Union and the other socialist countries, concerning which, as a rule, it indulges in wishful thinking. (*Caught in the Act*)

We are always skeptical when people praise spies . . . it is a well-known fact that it was not Mr. Dulles who distinguished himself by discovering the V-rockets but unassuming Miss Constance Babbington Smith, the British expert on aerial reconnaissance photography. (Edwards/Dunne)

How did the American intelligence service fare in this shocking event? The record indicates two sadly disappointing facts: (a) The CIA failed to supply America with authentic information on the fighting capacity of the Korean Communist forces (it was taken unawares, for example, by the presence of MIG-15 aircraft); (b) The CIA failed to give warning of China's entry into the war. (c) "On October 20 (1950)," President Truman records in his memoirs, "the CIA delivered a memorandum to me which said that they had reports that the Chinese Communists would move in far enough to safeguard the Szechwan electric plant and other installations along the Yalu River which provided them with power." Actually the Chinese had begun crossing Yalu four days earlier. (*ibid.*)

But if we really want to find examples of CIA blunders, we need take a look at its estimates regarding the Soviet Union. . . . The list begins with the appalling mistake in estimating the time

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quired to make a Soviet atom bomb and ends in complete confusion over the Soviet rockets. (*ibid.*)

In the intervals he [Mr. Dulles] affords Mr. Khrushchev enormous pleasure. He sends out agents who afterwards hold press conferences in Moscow, Prague and East Berlin. He reassures Congressmen and Secretaries by telling them not to believe in Soviet claims, which in next to no time become irrefutable reality. He despatches aircraft to the East as gifts to Communist propaganda. And, finally, he forced a weak-willed President to announce that unsuccessful espionage is part of the official policy of the great American democracy, thus creating confusion throughout the Western world.

We have naturally always been tolerant of this man. But deeply convinced that even the Americans are not rich enough or powerful enough to allow themselves the luxury of keeping Mr. Dulles in such a responsible post any longer. He has done his duty—we shall not argue how well. And now he must definitely go, or all of us may perish in an atomic inferno. (*ibid.*)

Dulles himself has said, "You have to look to the man who is directing the organization and the result he achieved. If you haven't got someone who can be trusted, or who doesn't get results, you'd better throw him out and get someone else."

This is sound advice and will probably be prophetic. It is doubtful that Allen Dulles will last through 1961 as director of the CIA. (Light/Marzani)

But we must look deeper into the structure of the CIA. Leaving aside the morality of invading a sovereign nation in times of peace, the sheer massive misrepresentation of intelligence as well as the bumbling inefficiency of execution staggers the imagination. Here is an agency that has tens of thousands of employees and spends hundreds of millions of dollars a year (the exact amount being unknown as the CIA has no Congressional supervision) and yet can fail so dramatically to present a true picture of conditions within a small nation 90 miles from our shores—which until Jan. 3, all U.S. citizens might freely visit. Where were all those secret agents and spies which the CIA is supposed to have all over the world? Did they mislead Washington? (*ibid.*)

The bad judgement implicit in ordering the [U-2] flight at such a delicate time, the ridiculous CIA "cover story" that Powers was gathering weather data, the solemn promulgation of this fairy tale and the swift subsequent exposure of the United States before the world as an arrant liar—all of this wrecked the Summit, forced the United States to abandon the U-2 aerial program, and inflicted enormous worldwide damage on American prestige. (Cook)

These initial blunders of intelligence in the Korean War were matters of relatively little moment compared to the final one that, in the fall of 1950, literally cost the lives of thousands of American soldiers. . . . If U.S. forces pressed on into North Korea, would the Chinese Communists . . . enter the war?

General Douglas MacArthur was confident that they would not. All of our intelligence forces agreed in essence on this forecast . . . the intelligence for which we pay literally billions of dollars was abysmally wrong. . . . In the Korean War, as in the case of Cuba, there were many clear and explicit warnings that a blind intelligence refused to heed. (*ibid.*)

Mere Scapegoat

In mid-1961, however, taking account of the prospect of reorganization and change of leadership for CIA, the Bloc propagandists began to pull their audiences back from the dangerous assumption that removal of the CIA cancer would leave U.S. policy clean and wholesome. CIA, ineffective and immoral as it is, now becomes the mere instrument of U.S. foreign policy and a scapegoat for its failures; it is the police itself that must be changed:

According to the U.S. press the CIA is being reorganized by President Kennedy's instructions. The CIA has become notorious throughout the world for its shameful actions. This agency arranged the U-2 spy flights over Soviet territory where a U-2 plane was shot down. The agents of this institution prepared the armed mercenary aggression against the Cuban people. The institution is to a large degree responsible for the cold war.

Nevertheless the masters of shameful business have lately been experiencing more and more failures. They failed in Laos as they got what they deserved in Cuba. All this has caused a stir in Washington, and no wonder, for the CIA is a U.S. Government institution with many privileges and rights. Its failures are failures and defeats for the U.S. Government. After a series of shameful defeats, specifically in Cuba, President Kennedy ordered a reorganization of the activities of the spy center.

Now a readjustment is going on. The parties responsible are being sought. But it is public knowledge that in this case the CIA is the scapegoat, for this spy center was merely carrying out instructions from higher official bodies and applying U.S. foreign policy in its way.

And so the claims by the Yankee press that when the CIA is reorganized there will be no more failures are words intended for simpletons. The shameful failures in foreign policy and the signs of anti-North-Americanism are not just the results of CIA activities, but primarily of the aggressive, imperialist foreign policy of the United States. To avoid such failures what is necessary is not a readjustment of the CIA, but a radical change in U.S. policy and renunciation of intervention in other countries' domestic affairs. (Radio Moscow to South America, 3 July 1961)

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Guideposts for the dim, replicate half-world where counterintelligence raises deception to the second and third powers.

OBSERVATIONS ON THE DOUBLE AGENT

F. M. Begoum

The double agent operation is one of the most demanding and complex counterintelligence activities in which an intelligence service can engage. Directing even one double agent is a time-consuming and tricky undertaking that should be attempted only by a service having both competence and sophistication. Competence may suffice for a service that can place legal controls upon its doubles, but services functioning abroad—and particularly those operating in areas where the police powers are in neutral or hostile hands—need professional subtlety as well.

Other requisites are that the case officer directing a double agent have a thorough knowledge of the area and language, a high order of ability in complex analytic reasoning, thorough grounding in local laws governing espionage, enough time from other duties to run the operation well and report it well, a detailed understanding of the adversary service (and of any liaison service that may be involved), adequate control of the agent's communications, including those with the adversary, a full knowledge of his past (and especially of any prior intelligence associations), a solid grasp of his behavior pattern (both as an individual and as a member of a national grouping), and rapport in the relationship with him.

Like all other intelligence operations, double agent cases are run to protect and enhance the national security. They serve this purpose principally by providing current counterintelligence about hostile intelligence and security services and about clandestine subversive activities. The service and officer considering a double agent possibility must weigh net national advantage thoughtfully, never forgetting that a double

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ble agent is, in effect, a condoned channel of communication with the enemy.

Some Western services have become highly skilled through long experience with double agent cases and other counter-espionage operations. Of the Communist Bloc services, the Soviets manifest patience and a conceptual pattern both intricate and inherently consistent; to create or enhance confidence in an important double agent they are willing to sacrifice through him information of sufficient value to mislead the reacting service into accepting his bona fides. They make extensive use of provocateurs to establish double agents, especially among émigrés. Not much is known about Chinese Communist capabilities in this specialty; available indications suggest mediocrity. The remainder of the Bloc is spotty: the North Koreans are amateurish, the Hungarians and Czechs have demonstrated competence, and the Poles, maintaining an old tradition, show a level of skill (but not of resources) approaching that of the Soviets. We Americans have acquired a broad range of experience since our entry into World War II, but twenty years is not enough time for mastering such an art. We are especially unversed in active and passive provocation.

His Nature and Origins

A double agent is a person who engages in clandestine activity for two intelligence or security services (or more in joint operations), who provides information about one or about each to the other, and who wittingly withholds significant information from one on the instructions of the other or is unwittingly manipulated by one so that significant facts are withheld from the adversary. Peddlers, fabricators, and others who work for themselves rather than a service are not double agents because they are not agents. The fact that doubles have an agent relationship with both sides distinguishes them from penetrations, who normally are placed with the target service in a staff or officer capacity.

The unwitting double agent is an extremely rare bird. The manipulative skill required to deceive an agent into thinking that he is serving the adversary when in fact he is damaging its interests is plainly of the highest order.

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The way a double agent case starts deeply affects the operation throughout its life. Almost all of them begin in one of the three ways following:

The Walk-In or Talk-In. This agent appears in person, sends an intermediary, makes a telephone call, writes a letter, or even establishes radio contact to declare that he works for a hostile service and to make an offer to turn against it. Although the danger of provocation is always present, some walk-ins and talk-ins have proved not only reliable but also very valuable.

The Agent Detected and Doubled. A service discovering an adversary agent may offer him employment as a double. His agreement, obtained under open or implied duress, is unlikely, however, to be accompanied by a genuine switch of loyalties. The so-called redoubled agent—one whose duplicity in doubling for another service has been detected by his original sponsor and who has been persuaded to reverse his affections again—also belongs to this dubious class. Many detected and doubled agents degenerate into what are sometimes called "piston agents" or "mailmen," who change their attitudes with their visas as they shunt from side to side. Operations based on them are little more than unauthorized liaison with the enemy, and usually time-wasting exercises in futility. A notable exception is the detected and unwillingly doubled agent who is relieved to be found out in his enforced service to the adversary.

The Provocation Agent. The active provocateur is sent by Service A to Service B to tell B that he works for A but wants to switch sides. Or he may be a talk-in rather than a walk-in. In any event, the significant information that he is withholding, in compliance with A's orders, is the fact that his offer is being made at A's instigation. He is also very likely to conceal one channel of communication with A—for example, a second secret writing system. Such "side-commo" enables A to keep in full touch while sending through the divulged communications channel only messages meant for adversary eyes. The provocateur may also conceal his true sponsor, claiming for example (and truthfully) to represent a Satellite military service whereat

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his actual control is the KGB—a fact which the Soviets conceal from the Satellite as carefully as from us.

The passive provocation, or "stake-out," is a subtler member of the tribe. In Country C Service A surveys the intelligence terrain through the eyes of Service B (a species of mirror-reading) and selects those citizens whose access to sources and other qualifications make them most attractive to B. Service A then recruits from these and waits for B to follow suit. The stake-out has a far better chance of success in areas like Africa, where intelligence exploitation of local resources is far less intensive, than in Europe, where persons with valuable access are likely to have been approached repeatedly by recruiting services during the post-war years.

Sometimes a double agent operation is turned over by a liaison service to a U.S. service or by one U.S. service to another. When such a transfer is to be made, the inheriting service ought to delve into the true origins of the case and acquire as much information as possible about its earlier history.

For predictive purposes the most important clue imbedded in the origins of an operation is the agent's original or primary affiliation, whether it was formed voluntarily or not, the length of its duration, and its intensity. In extreme cases the agent may have volunteered or willingly agreed to work for a hostile service before the U.S. case officer who is now weighing the merits of doubling him was even born. The effects of years of clandestine association with the adversary are deep and subtle; the American case officer working with a double agent of Russian origin against, say, the KGB should never forget that the agent and his Soviet case officer share deep bonds of language and culture, even if the agent is profoundly anti-Communist.

Another result of lengthy prior clandestine service is that the agent may be hard to control. In most operations the case officer's superior training and experience give him so decided an edge over the agent that recognition of this superiority makes the agent more tractable. But add to the fact that the experienced double agent may have been in the business longer than his U.S. control his further advantage

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in having gained a first-hand comparative knowledge of the workings of at least two disparate services, and it is obvious that the case officer's margin of superiority diminishes, vanishes, or even is reversed.

The Value of His Services

The nature and value of the double agent's functions depend greatly on his personal ability as well as on his mission for the other service. He can always report on the objective and conduct of this mission and possibly more broadly on the positive and counterintelligence targets of the other service or on its plans. If he is skillful and well trained, he can do valuable work by exploiting the weaknesses of others: intelligence officers of any service, despite their training, have some weaknesses. Some are loose-mouthed, some like to drink, others tend to brag.

The case officer may find his agent to be a wonderful fellow and confide in him, putting him in a good position to elicit specific information and making him the recipient of all manner of unsolicited information. The agent may be able to learn the operational techniques, the security practices, the training methods, and the identity of other members of the service. Possibly, if at a high enough level, he may even be able to report the policies and intentions of the government. Although such a double agent is extraordinary, there are records of some whose reports have been of major national importance. Normally, however, the double agent does not have access to such information.

Often a double agent, after a period of time, is able to report on the capabilities of the other service, if not directly at least by giving information on his own handling from which specific capabilities can be inferred. For example, he can report on the type of support given him in servicing dead drops providing accommodation addresses, arranging transportation, and supplying technical equipment. If he has been issued some modern technical device, say an automatic transmitter, it can logically be concluded that the service has good support capability.

The double agent often has access through his travels to the other service to positive intelligence on that country, on third countries of interest to the controlling service. But

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even when his mission does not afford such opportunities, he is always able to report his observations of the other service. These bits of information can be accumulated until they give a picture of the other service's administrative practices, its personnel, and possibly its liaison with other intelligence and security services. Debriefing for this purpose in minute detail is time-consuming, however, and it is a real problem to strike the right balance in the agent's time between extensive debriefing and running him back into the other service.

The double agent serves also as a controlled channel through which information can be passed to the other service, either to build up the agent in its estimation or for purposes of deception. Often operational build-up material is passed first to establish a better reception for the deception material: obviously the greater the stature of the agent in the eyes of the other service, the better the reception of the reports he provides. In the complex matter of deception we may distinguish here between operational deception, that concerning the service's own capabilities, intentions, and control of the agent, and national deception, that concerning the intentions of the controlling government or other components of it. National deception operations are usually very delicate, frequently involving the highest levels of the government, and therefore require prior coordination and approval at the national headquarters level.

The double agent channel can be used by the controlling service to insert data into the mechanisms of the other service with a number of possible objectives—for example, to detect its activities in some field. The inserted material is designed to induce certain actions on the part of the other service, which are then observed through another operation or group of operations. The material has to be designed very skillfully if it is to deceive the other service and produce the desired reactions. A sophisticated operation of this type is most likely to be used when the stakes are high or the case complicated. Such a situation might arise if a case officer handling several operations wanted to set up still another and needed to find out in advance what the pertinent operational pattern was. The passing of data through the double agent channel for the consumption of the other service for what-

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ever purpose requires a great deal of knowledge about other service.

A double agent may serve as a means through which a provocation can be mounted against a person, an organization, intelligence or security service, or any affiliated group to induce action to its own disadvantage. The provocation might be aimed at identifying members of the other service, at diverting it to less important objectives, at tying up its ranks, at inserting false data into its files to mislead it at building up in it a tainted file for a specific purpose, forcing it to surface an activity it wanted to keep hidden, at bringing public discredit on it, making it look like an organization of idiots. The Soviets and some of the Satellites, the Poles in particular, are extremely adept in the art of conspiratorial provocation. All kinds of mechanisms have been used to mount provocation operations; the double agent is only one of them.

There is still another important function the double agent can perform. He can provide a channel for a recruitment or defection operation against the other service. If he is shrewd and personable enough to have succeeded in establishing psychological ascendancy over his case officer in the other service, he may be able to recruit him or persuade him to defect. If the attempt fails, of course, the whole operation is to be terminated. In a double agent operation that is useful only for a certain span of time or one that for any reason is about to collapse, there may be an opportunity at point of termination to use the agent to make a recruitment or defection approach. The agent can be instructed to pitch his last job a pitch to the other service's case officer, reminding him that he has been under the control of the opposing service for a number of years, pointing out that the case officer's name will be mud when he returns to his headquarters, suggesting that he may as well save his skin and make a switch. In this attempt the agent might be limited to pitching the seed, or he might carry through the complete recruitment or defection.

Occasionally a service runs a double agent whom it knows to be under the control of the other service and therefore

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little ability to manipulate or even one who it knows has been successfully redoubled. The question why a service sometimes does this is a valid one. One reason for us is humanitarian: when the other service has gained physical control of the agent by apprehending him in a denied area, we often continue the operation even though we know that he has been doubled back because we want to keep him alive if we can. Another reason might be a desire to determine how the other service conducts its double agent operations or what it uses for operational build-up or deception material and from what level it is disseminated. There might be other advantages, such as deceiving the opposition as to the service's own capabilities, skills, intentions, etc. Perhaps the service might want to continue running the known redoubled agent in order to conceal other operations. It might want to tie up the facilities of the opposition. It might use the redoubled agent as an adjunct in a provocation being run against the opposition elsewhere.

Running a known redoubled agent is like playing poker against a professional who has marked the cards but who presumably is unaware that you can read the backs as well as he can.

Sometimes, although infrequently, double agent operations are started for propaganda purposes. A Soviet-controlled provocateur works for a Western service for a year or two and is then pulled back home, where he is surfaced on the radio and in press interviews to denounce his former Western spy masters. More frequently the Soviets use this trick to get added mileage from an operation that is dying anyway.

Finally, liaison services running a double agent jointly against an adversary quite naturally use this opportunity to assay each other's capabilities. There is nothing perfidious in this practice as long as it is kept within bounds. Unless the U.S. service operating from a friendly country, for example, can realistically gauge its host's capabilities in such vital matters as physical surveillance, phone taps, and hostile interrogation, the operation is likely to go awry.

Controlling Him

Since a good deal of nonsense about control sometimes crops up in our thinking about double agents, a definition is

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first in order. Control is the capacity of a case officer (a his service) to generate, alter, or halt agent behavior by use or indicating his capacity to use physical or psychological means of leverage. A case officer does not control an agent the way he controls an automobile. And a case officer working overseas does not control a double agent the way a policeman controls an informer. The intelligence officer who thinks control in absolutes of black and white does his operation disservice; the areas of gray predominate.

First, the U.S. case officer running an operation abroad usually lacks executive powers. Second, the very fact that the double agent has contact with the opposition affects control. For example, pressure exerted bluntly or blindly, without insight into the agent's motivation and personality, may cause him to tell the truth to the adversary as a means of escape from a painful situation. Before the case officer pushes a button on the agent's control panel he should know what is likely to happen next. Finally, the target service inevitably exercises some control over the double agent, if only in the performance of the tasks that it assigns to him. In fact it is a primary principle of the counterintelligence service not to disrupt hostile control of the positive half of the operation and thus tip its CI hand. Even if the positive side is being run so poorly that the misguided agent is in danger of coming to the attention of local authorities whose intervention would spoil the CI aspect too, the case officer must restrain his natural impulse to button up the adversary's operation for him. At the very most, he can suggest that the agent complain to the hostile case officer about insecure practices, and then only if the agent's sophistication and relationship with the case officer make such a complaint seem normal.

Complete physical control of the double agent is rare in peacetime situations. Normally it is achieved only over the agent captured in war. Limited physical control, however, may be exercised in varying degrees: an agent may have a home in an area where he is subject to complete surveillance or he may live in an uncontrolled area but work in a controlled installation.

The degree to which an agent's communications can be controlled runs closely parallel with the degree to which he

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physically controlled. Communications control, at least partial, is essential: the agent himself is controlled to a considerable extent if his communications are controlled. But even when his communications are completely controlled, a well-trained agent doubled against his will can appear to be cooperating but manage at an opportune moment to send a signal to his own service indicating that he is under duress. A number of captured wartime Soviet, British, and German agents did manage to get off such signals.

With only partial control, if the agent is in communication with the opposition service through a courier, dead drop, or live drop, some control or surveillance has to be established over these meetings or servicings. The double agent who makes trips in and out of the area where he can be physically controlled presents a multiplicity of problems.

Assessing His Potential

Acquisition of a double agent may be the result of a deliberate follow-up of leads, or it may be opportunistic. The counterintelligence screening process that forms part of security programs produces many leads. Others may arise in the course of positive operations. Opportunistic acquisition, as of a walk-in, has the disadvantage of being unexpected and therefore unplanned for: the decision to run a double agent should be made only after a great deal of thought, assessment, and evaluation, and if the candidate comes as a volunteer, the service may have to act without sufficient time for reflection. In this situation the necessity of assessing the candidate conflicts also with the preservation of security, particularly if the officer approached is in covert status. Volunteers and walk-ins are tricky customers, and the possibility of provocation is always present. On the other hand, some of our best operations have been made possible by volunteers. The test of the professional skill of an intelligence organization is its ability to handle situations of this type.

When a double agent candidate appears, judgments are needed on four essential questions in order to decide whether a potential operation exists, whether to run the candidate, and whether the service has the capability to do so.

Has he told you everything? Enough information can ordinarily be obtained in one or two sessions with the candidate

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to permit testing by polygraph, investigation of leads, file checks. These steps must be taken very quickly because it is not possible to un-recruit a man. The two areas of sible concealment which are especially dangerous are intelligence ties and side-commo.

Does he have stayability? This term combines two concepts—his ability to maintain access to the counterintelligence target for the foreseeable future, and his psychological stamina under the constant (and sometimes steadily increasing) pressure of the double agent's role. If he lacks stayability he may still be useful, but the operation must then be played for short range.

Does the adversary trust him? Indications of adversary trust can be found in the level of the communications item given him, his length of service, the seniority of the adversary case officer, the nature and level of requirements, the kind and extent of training provided. If the opposition keeps the agent at arm's length, there is little prospect of doubling him will yield significant returns.

Can you control his commo both ways? Control of communications on your own side can be difficult enough, especially if the agent lives in hostile territory. But control of adversary channels is hard under even the best of circumstances. requires a great deal of time, technical skill, and—as a rule—manpower.

Negative answers on one or even two of these questions not ground for immediate rejection of the possible operation. But they are ground for requiring some unusually high tries on the credit side of the ledger.

The initial assessment is made essentially through interrogation, used in a broad sense to include friendly debriefing or interview. The interviewing officer may be relaxed and casual, but underneath the surface his attitude is one of liberate purpose: he is trying to find out enough to make an initial judgment of the man. A human being in a stress situation is a complicated personality, and the interviewing officer must penetrate below the surface, sensing the man's emotions and mental processes. For instance, if an agent who, in, says he is a member of another service, and reveals information so sensitive that the other service would surely

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give it away just to establish the informant's bona fides, there are two possibilities: either the agent is telling the truth or he is attempting a provocation. Sometimes the manner in which the man conducts himself will suggest which of the two it is.

In addition to establishing the individual's true identity and examining his documents, the officer should get as many details as possible on the service he belongs to and his position in it. His job may be such that it is necessary to make a fast initial judgment: for example, he may be one of the two or three intelligence officers in a small office where a prolonged absence would cause suspicion.

It may be more difficult to determine the reason why the agent presented himself than to establish who he is and what service he represents, because motivation is a complex of mental and emotional drives. The question of the double agent's motivation is approached by the interviewing officer from two angles—the agent's professed reasons and the officer's own inferences from his story and behavior. The agent may profess a love for democracy, but the officer cannot elicit any convincing evidence of such a love. Some of the agent's reasons may not ring true. To decide between what the officer thinks the motive is and what the agent says it is is not easy, because double agents act out of a wide variety of motivations, sometimes psychopathic ones like a masochistic desire for punishment by both services. Others have financial, religious, political, or vindictive motives. The last are often the best double agents: they get pleasure out of deceiving their comrades by their every act day after day.

Making the judgment about the agent's psychological and physical suitability is also difficult. Sometimes a physician or psychiatrist can be called in under some pretext. For the most part, however, professional assistance is not available, and the interviewing officer must rely upon his own skill in assessing human beings and understanding what makes them tick. Such skill can be acquired only by experience.

Experience suggests that some people who take to the double agent role—perhaps a majority of willing ones, in fact—have a number of traits in common with the con-man. Psychiatrists describe such persons as sociopaths. From the

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point of view of the double agent operation, here are the key traits:

They are unusually calm and stable under stress but cannot tolerate routine or boredom.

They do not form lasting and adult emotional relationships with other people because their attitude toward other people is exploitative.

They have above-average intelligence. They are good balancers—sometimes in two or more languages.

They are skeptical and even cynical about the motives and abilities of others but have exaggerated notions about their own competence.

Their reliability as agents is largely determined by the extent to which the case officer's instructions coincide with what they consider their own best interests.

They are ambitious only in a short range sense: they want it now and they want it now. They do not have the patience to plod toward a distant reward.

They are naturally clandestine and enjoy secrecy and deception for its own sake.

In brief, the candidate must be considered as a person whose operation as a potential. Possibilities which would otherwise be rejected out of hand can be accepted if the counterintelligence service is or will be in a position to obtain and maintain an independent view of both the double agent and the case. Perhaps such independent collateral can be acquired from another operation, in being or in the offing.

The officer's estimate of the potential value of the operation must take into consideration whether his service has requisite personnel, facilities, and technical support; whether running the operation will prejudice other activities of government; whether it will be necessary or desirable, at once or later, to share the case with foreign liaison; whether the case has political implications.

Running the Operation: Do's and Don'ts

The following principles apply to the handling of all double agent operations in varying degrees. In composite they form a check-list against which going operations might be periodically reviewed.

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cally reviewed—and given special examination with the appearance of danger signals.

1. Remember that testing is a continuous process. Use the polygraph early and run later tests as well. Be alert for changes in agent motivation. When you can do so securely, employ such additional means as further records investigation, checking out of operational leads, technical analysis of documents and equipment, surveillance and countersurveillance, mail and telephone taps, and substantive analysis of reporting. Although name traces cannot be run on every person mentioned by the agent, do not be stingy with them on persons who have familial, emotional, or business ties with him.

2. Train the agent, but only as a double. Give him training as needed in security of the doubled part of the operation, CI reporting, cover as a double, the handling of technical equipment used for CI purposes, etc. But do not poach on enemy territory by teaching him the skills he needs for adversary purposes. An "inexplicable" improvement in his work would draw suspicion.

3. Be careful about awakening in the hostile service an appetite which cannot later be satisfied without giving away too much. Do not furnish build-up material that transcends the agent's access or that will rouse adversary interest in sensitive areas. In general, let the agent carry out his adversary assignments on his own instead of spoonfeeding him, although there are exceptions to this rule.

4. Require the agent to report and, as security permits, turn over to you everything he gets from the other side—money, gifts, equipment, documents, etc. If he is permitted to hold out anything he may grow confused about which side he is working for. But do not be too rigid in following this rule. It may be better, for example, instead of confiscating his payments from the adversary, to put them into a third-country bank account and promise him the lump sum upon successful termination.

5. Avoid interference. Oblige the other service to solve any problems that arise from the agent's activity on its behalf. For example, if the agent is arrested or threatened with arrest by local authorities, the counterintelligence officer

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should not rush to his aid. The threatened agent should take his problem to the adversary, who may be forced to face a new asset in order to help him. It should be explained to the agent that you are not indifferent but on the contrary too concerned about his security to blow him by meddling.

6. Be constantly alert for hostile provocation. The operation may create a security crisis for the agent, or he may make their instigation report such a crisis. If he does, examine the claim thoroughly and test it.

7. If the adversary appears to be a Satellite service, do not lose sight of the possibility that the agent is being manipulated behind the scenes by the Soviets, probably without the Satellite's knowledge.

8. Keep analyzing the agent as well as the case. Do not be satisfied to fix a label (such as "anti-Communist") to the agent instead of learning to understand him.

9. If the agent is to pass classified U.S. information to the adversary, keep precise records of what was passed, where, and by whom, and the date.

10. Do not plan a deception operation or pass deceptive material without prior headquarters approval.

11. Do not reveal your service's assets or CI knowledge to a double. It is vital that double agents be run within the framework of their own materials—the information which they themselves supply. Junior CI officers, especially, should be tempted to impress double agents with the omniscience of their service. The more you keep from an experienced double the information he should not have, the more he will be assured that his own safety is in good hands.

12. Prepare all briefings carefully. Have the agent rehearse his instructions. If you think it advisable, brief him on resistance to interrogation; but be cautious, if you are about to reveal to him the specifics and scope of your knowledge of the adversary.

13. Mirror-read. Look at the operation from the viewpoint of the hostile service. But be careful not to impute to it motives, ideas, methods, or other characteristics of your own service. Do not put the adversary in your place; put yourself in his, a task which requires both knowledge and understanding of him.

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14. Do not run the operation in a vacuum. Be aware of any political implications that it may have, locally or internationally.

15. Do not hesitate to ask for help.

16. Review the case file periodically. Restudy of the operation sometimes throws into relief facts previously ignored, misinterpreted, or improperly linked to one another. As new information develops, it will throw a new light on the old facts. And review cover now and then—for your service, yourself, the agent, and your meetings with him.¹ Consider whether new developments require any changes.

17. Decide early in the operation how it will be terminated if the need arises. Do not merely drop it without further steps, leaving an unsupervised hostile agent in place. If he is to be turned over to a local security service, try to make the transfer while there is still some equity in it for them.

18. If the operation is joint, weigh its probable effect upon the liaison relationship.

19. Keep a full record, including dates, of all adversary assignments given the agent.

20. Report the case frequently, quickly, and in detail. The hostile services are centralized. Pitting against them the limited resources of one U.S. officer or field installation means giving them needlessly favorable odds. Only timely and full reporting to your headquarters will permit it to help you effectively.

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British experience in giving responsibility for psychological and paramilitary operations to an independent organization.

INTELLIGENCE AND COVERT ACTION

Albert E. Riffe

After the failure at Cuba's Bay of Pigs a number of new paper articles appeared in the United Kingdom suggesting that the Americans take lessons from the British, styled expert in the organization and conduct of paramilitary operations and other kinds of covert action. Some of these were reprinted or otherwise reflected, particularly on the subject of organization, in the American press, for example:

When the Office of Strategic Services was organized in World War II, the British argued long and hard . . . that the two functions [intelligence and covert action] should be separated. . . . As far as the organization of intelligence is concerned, the British practice what they preach. Military Intelligence 6 has always been divorced from the Special Operations Executive, which acts on M.I. 6's information.²

The British, who have had long experience in these matters, separate MI-6, their intelligence agency, from their special operations executive—and with good reason. An organization that goes to risk the lives of its operatives will give intelligence estimates a severely pragmatic appraisal, it is remarked. On the other hand, when the functions are combined, the confidence which the responsible officials feel in the intelligence impels them to run into action.³

These preachments, like many others in the wake of the Cuban affair, were crystallized out of a lack of information. The facts are, first, that although the British special operations organization was independent of MI-6 from 1940 to the end of the war, MI-6 had the responsibility for these operations before that period and has had it since, and second, that the record of the wartime SOE, although it scored some brilliant

¹ *New York Times*, 21 April 1961, from London correspondent Drew Middleton.

² *New York Times*, 30 April 1961.

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liant successes, was over all not such as to inspire emulation. Some of its most conspicuous failures are directly traceable to its separation from MI-6 and the British counterintelligence agency, MI-5.

SOE Mission and Doctrine

At the beginning of the war MI-6, the Secret Intelligence Service charged with the collection of foreign intelligence not overtly obtainable, was also responsible for "special operations"—i.e., the planning and conduct of paramilitary activity and psychological warfare. The mushrooming importance of these specialties led to the creation in 1940 of a separate agency for them, the Special Operations Executive, under the new Ministry of Economic Warfare and "for all of its activities of a specifically military nature or which might bring military repercussions," operationally under the Chiefs of Staff.³

It was SOE's mission to influence public opinion abroad through covert propaganda and psychological warfare, to carry out sabotage, to organize and support guerrilla resistance, and to build up in German-occupied areas armed and trained forces to be held in reserve until Allied armies could begin their eventual assault. Major-General Gubbins, at one time Chief of SOE, explains:

The British Commonwealth was on the defensive and it was clear that it would be years before invasion would be possible; what could, however, be done in the meantime was to attack the enemy by unorthodox methods: attack his war potential wherever it was exposed and at least create some kind of running sore to drain his strength and disperse his forces and, finally, when invasion of the Continent did take place, to give the maximum of assistance to the forces of liberation.⁴

SOE realized that covert action such as sabotage, planned slowdowns, *coup de main* raids, and the creation of hidden arms-dumps called for very tight security. André Dewavrin, who used the alias "Colonel Passy" while working closely with

³ Major-General Sir Colin Gubbins, lecture, "Resistance Movements in the War," 28 January 1948, printed in the *Journal of Royal United Service Institution*, London, p. 211.

⁴ *Ibid.*, pp. 210-211.

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the French section of SOE, has summarized the British concept:

It is a matter of being sure that, on D Day, we have on hand, at given points in France, small armed groups provided with explosives and capable of carrying out destruction plans prepared by the Inter-Allied Staff. What we want is to have direct control of these groups and to give them the means of communicating directly with us, so that we can be assured that whatever orders we give them will be carried out immediately.

We also consider it important that these teams or small groups will be absolutely separate, one from the other, in order to avoid the danger which threatens and will continue to threaten a large resistance movement. It is important to know that an accident to one group will not bring about a chain reaction, leading to catastrophes which might extend throughout a large region or even the entire country.

Our groups are small, strictly local, and therefore easier to command and to lead than large movements which can never be ordered to carry out a destruction plan without going through a long and indefinite chain of command.⁵

Major-General Gubbins also notes SOE's concern for the safety of its operations and people:

For over-riding reasons of operational security, the control of signals traffic and of the training and despatching of personnel remained with SOE, and the teams in the field were organized as far as possible on the British model into water-tight compartments, each with its specific area and specific targets. . . .⁶

But as SOE began to function abroad, it began to experience some of the chain-reaction catastrophes that Dewavrin describes the measures to forestall. It was soon evident that security demanded much more than a concept of compartmentation. Major-General Gubbins said, "The history of the building up of the secret armies in France, as in other Western European countries though to a lesser degree, was studded with sudden arrests of key men, with discovery of our W/T sets and setbacks of all kinds."⁷ This admission is an understatement.

⁵ Translated from Colonel Passy's *Souvenirs. 10 Duke St., Londres (le B.C.E.A.)* (Monte Carlo, 1947), Vol. II, pp. 166-167.

⁶ Gubbins, *op. cit.*, p. 213.

⁷ *Ibid.*, p. 218.

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Catastrophes by Country

The most famous SOE disaster occurred in Holland, where some of the first agents parachuted in were picked up by German counterintelligence and forced to transmit to London faked reports and arrange for drops of supplies and other agents, who could then be arrested as they landed and their communications also taken over. This ghastly game went on for twenty months, in spite of several signs and express warnings that reached London alerting the SOE to the situation, until 54 agents had been arrested and all the operations they were supposed to be carrying out were frustrated. Forty-eight of the agents were eventually shot at Mauthausen.⁸

In Greece the first parachutists, a saboteur team, were to be dropped from three planes at a place where they could make contact with resistance leader Colonel Zervas. One of the planes failed to drop its men, and the other two dropped them in the wrong place on ground totally unsuited for parachute landings. Their equipment was scattered, their radio smashed beyond repair, and the local inhabitants had never heard of Colonel Zervas, who was many miles away.⁹

In Denmark, of the first two agents dropped one was killed when his parachute failed to open and the other lost all his equipment, including his radio. He could therefore not communicate with London to get instructions, and he had been given no alternative contacts or directions. A second team dropped later did manage to build up a resistance organization; but within six months its leader was killed, and the organization floundered and gradually broke down, leaving SOE without a Danish operation until 1943.¹⁰

In Belgium SOE and the Belgian Deuxième Section worked together to unify the resistance and shape a sabotage organization and a hidden army. In late April 1943 eight key underground leaders were instructed by letter to attend a joint conference in Liège. When they arrived, two were shot and

⁸ See Herman J. Gliskies' *London Calling North Pole* (New York, 1953).

⁹ Ronald Seth, *The Undaunted: The Story of Resistance in Western Europe* (London, 1956), p. 68.

¹⁰ *Ibid.*, pp. 102-106.

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the remainder arrested by the Gestapo, which had arranged the "conference." The following night fifty more were arrested. This mass roundup ended the hope of a unified organization.¹¹

In France, where SOE operations were most intense, both the Gestapo and German military counterintelligence succeeded in penetrating and manipulating the nets. Through infiltration they located and seized dumps of arms and ammunition and entrapped a large number of SOE leaders, including Peter Churchill and "Prosper," leader of the resistance in Paris. Maurice Buckmaster, head of the SOE French section at headquarters, says that Prosper's net was "permeated with enemy agents."¹² More than one quarter of the 366 agents dropped during the war lost their lives. In mid-1943 a series of arrests rolled up almost all SOE operations in France and left in Paris, for example, only a single radio operator.¹³

Amateurs Against Professionals

What were the reasons for SOE's failures? Some of the causes could not have been corrected. It was not within SOE's power to alter the attitude of General de Gaulle, for example, toward British operations conducted in France, or to persuade the RAF to provide better air support. Some contamination spreading from traitors already encysted in foreign undergrounds was also unavoidable. But there were deeper reasons.

First of all, the SOE was an organization of amateurs. Unlike MI-5 and MI-6, both of which had a continuity of doctrine and of personnel, SOE was thrown together by picking up from the armed forces and from every walk of civilian life a large number of people who spoke some foreign language and who seemed, according to the intuitive feelings of the SOE chiefs, to be proper material. Psychologists were hired

¹¹ *Ibid.*, p. 271.

¹² Maurice Buckmaster, *They Fought Alone* (London, 1958), p. 208.

¹³ This was Noor Inayat Khan, whose pathetic story is told in Jean Fuller's *Madeleine* (London, 1952). Jean Fuller's books about SOE women in France, together with Elizabeth Nicholas' *Death Be Not Proud* (London, 1958), precipitated a stir in Parliament on the question whether SOE was careless in its training and direction of staff agents.

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to assess candidates but were not told the purpose of the assessments, and according to Buckmaster the psychological findings were largely ignored. Above all, because Buckmaster and other chiefs were themselves chosen by equally random methods, there was nowhere in the newly formed service a solid core of experience, a cadre of professionalism in the conduct of the clandestine.

This initial weakness was compounded by the fact, pointed out by Sir Colin Gubbins in the lecture quoted above, that SOE conducted all of its own training. Candidates were trained in a variety of skills—parachute jumps, marksmanship, the employment of explosives for sabotage, etc. SOE was scrupulous in checking their language qualifications, their forged documents (although the quality of the forgeries was not uniformly high), their clothing and other personal possessions, and just about anything else that might betray them as undercover agents. It also taught them the distinguishing uniforms, insignia, and decorations of the Germans. But it could not teach them the organization, *modus operandi*, and psychology of the German intelligence and security services; and it did not call upon the MI-5 and MI-6 experts who did know the subject. The consequences of this shortcoming are evident in the German counterintelligence coups in France, Belgium, and Holland.

No available sources indicate that SOE maintained card files or other rosters of known and suspected German intelligence and security personnel or of their collaborators of other nationalities. Buckmaster does say that Scotland Yard was "at all times at our service and they were immediately helpful to us in a number of ways: not only did they provide us with a thorough account of the history of possible recruits to our work, but they also put at our disposal experts whose job it was to detect enemy agents in this country and who were therefore able to help us protect our own men against mistakes . . ." ¹⁴ But the help available from this organization for internal police work was necessarily limited.

In short, the root of SOE's difficulties was its lack of coordination with the British espionage and counterintelligence services. A breach of distrust widened between MI-5 and

¹⁴ Buckmaster, *op. cit.*, p. 47.

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MI-6 on the one hand and SOE on the other. It is an open secret that the senior services, acutely distrustful of SOE's counterintelligence competence, hesitated to provide the newcomer with sensitive security information because of fear that their own sources would be blown as a result. This wall between the clandestine services and the SOE meant that while the British program of covert action was afforded some rudimentary protection by passive security measures it lacked totally, or nearly totally, the essential advantages that counterintelligence might have supplied. Highly powered but without brakes, SOE was certain to suffer a series of smash-ups.

Peacetime Considerations

The British learned their lesson. At the end of the war the Foreign Office and the Chiefs of Staff agreed to return the responsibility for covert operations to the jurisdiction of the Secret Intelligence Service. There were three reasons for the change: to ensure that secret intelligence and special operations were the responsibility of a single organization under a single authority; to prevent duplication, wasted effort, crossing of operational wires, friction, and consequent insecurity; and to tailor the size of the covert action staff to the greatly reduced scale of peacetime needs. The peacetime condition also added a new factor which greatly increased the importance of consolidation.

The covert operations conducted during the war did not have to be unattributable. On the contrary; saboteurs, for example, in order to avoid precipitating reprisals on the local population, would leave behind evidence which tended to indicate that British agents were responsible.¹⁵ Security and secrecy were important, but only tactically important. It was important that the Germans should not know the identities and homes of the resistance workers, but it never mattered at all that the Germans should know that the work was directed from England—indeed the B.B.C. acted as publicity agents for these resistance movements.

In time of peace the situation is quite different, for it is this strategic security which is all-important. Because governments cannot acknowledge the fact that they are under-

¹⁵ Seth, *op. cit.*, p. 47.

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taking clandestine operations, there has been developed a whole new, delicate technique, the technique of nonattributability. A successful nonattributable operation is a long, tedious, touchy, and complicated affair which, the British recognized, not only requires background intelligence but, more importantly, cannot be undertaken except by experienced case officers.

Thus the SOE-SIS disharmony and its consequences led the British to a firm postwar conviction—that a single service should be responsible for all clandestine and covert activity undertaken by the nation.

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Articles and book reviews on the following pages are unclassified and may for convenience be detached from the classified body of the *Studies* if their origin therein is protected. The authors of articles are identified in the table of contents preceding page 1.

The editors gratefully acknowledge the assistance of Mr. Walter Pforzheimer, Curator of the CIA Historical Intelligence Collection, in scanning current public literature for intelligence materials, and of the intelligence officers who prepared book reviews for this issue of the *Studies*.

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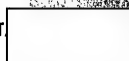
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On November 28, 1961, Allen Welsh Dulles was presented the National Security Medal by the President. These pages are taken from a transcript of the ceremony and from a USIB resolution of the same date.

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The President:

Mr. Dulles, Mr. McCone, and members of the Central Intelligence Agency. I want to first of all express my appreciation to you all for the opportunity that this ceremony gives to tell you how grateful we are in the Government and in the country for the services that the personnel of this Agency render to the country. It is not always easy. Your successes are unheralded, your failures are trumpeted. (I sometimes have that feeling about myself.) But I am sure you realize how important your work, how essential it is, and how the long sweep of history how significant your efforts will be judged. So I do want to express my appreciation to you now and I am confident that in the future you will continue to merit the appreciation of our country as you have in the past.

I am also particularly grateful because this ceremony gives us all an opportunity to pay tribute to an outstanding public servant. Allen Dulles' career as a citizen of this country as one who has made his vast resources, personal resources, available to this country stretches all the way back to the administration of President Woodrow Wilson. I know of no other American in the history of this country who has served seven administrations of seven Presidents, varying from party to party, from point of view to point of view, from problem to problem; and yet at the end of each administration each President of the United States has paid tribute to his service and also has counted Allen Dulles as their friend.

This is an extraordinary record, and I know that all of you who have worked with him understand why this record has been made. I regard Allen Dulles as an almost unique figure in our country. I know of no man who brings a great

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sense of personal commitment to his work, who has less pride in office than he has. And therefore I was most gratified when we were permitted today to come out to this Agency to present this award to him in your presence. I would like to read the citation.

Allen Welsh Dulles is hereby awarded the National Security Medal—He has every other decoration, and so we wanted to give him this one—as principal intelligence advisor to the President of the United States. Mr. Dulles has fulfilled the responsibilities of his office with unswerving purpose and high dedication. His ten years of service in the Central Intelligence Agency have been the climax of a lifetime of unprecedented and devoted public service. Beginning in the first world war and stretching through the administration of seven Presidents, the outstanding contributions that Mr. Dulles has made to the security of the United States have been based upon a profound knowledge of the role of the intelligence officer, a broad understanding of international relations, and a naturally keen judgment of man and affairs. The zestful energy and undaunted integrity of his service to his country will be an enduring example to the profession he has done so much to create.

Mr. Dulles:

Mr. President, distinguished guests, and members of the Central Intelligence Agency. I am deeply touched and deeply grateful for the words of the President and for the honor he has bestowed upon me.

It is almost eleven years to a day that I came down to Washington at the behest, I might almost say the order, of Walter Bedell Smith, a very great general and a very great man and my predecessor. I was then practicing the law. Bedell called me up and said, "You have written a report on how this Agency should be run, you and a few others, and you had better come down here." Mr. President, that was eleven years ago; and I am still here. It was in part the fascination of the work, the opportunities for service, and the indulgence and kindness of three Presidents, including President Kennedy, that have kept me on.

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The Agency was then young, in its infancy. It is still fairly young; but, Mr. President, I feel that I can assure you that we have here today a corps of well trained men and women devoted to their country, to their service, and, Mr. President, to you as their Commander in Chief. I feel proud of them; and I have been proud to have served with them and to visit them in all the corners of the earth where they are working in the national interest. They are now looking forward to serving their new chief, John McCone, my old friend.

To the Agency personnel here, a word of thanks. We have known good times and bad and, as the President has just said, our successes are unsung and our failures are advertised. I commend you to your new chief—and I can do that with assurance—and I have commended him to you.

Mr. President, as I close my work here I turn over my duties to Mr. McCone. I want to thank you for your constant support, help, and encouragement, for your understanding of the needs and the problems and the possibilities of this Agency. I know I am leaving my work in good hands. I believe the future of this Agency and service to the country is one that is assured. And as I receive this medal I receive it, Mr. President, not really in a personal capacity, but I receive it for all of you, because I know that in giving it to me he is giving it in a sense to all of the personnel of the Agency. My thanks, Mr. President.

The U.S. Intelligence Board:

Allen Welsh Dulles has made a unique contribution to intelligence. For a period longer than any other man he presided with distinction over the destiny of the foreign intelligence activities of the United States Government. Director of Central Intelligence since early 1953, he served concurrently as Chairman of the Intelligence Advisory Committee and the United States Communications Intelligence Board, later becoming first Chairman of the newly established United States Intelligence Board.

During the era of his leadership the intelligence community made notable progress. A single Board was created to guide the national intelligence effort. Within the community a greater measure of unity was realized, closer integration and

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veloped and more effective over-all coordination achieved. The quality of the coordinated intelligence produced at nearly all levels of the community improved materially. Most importantly, this period saw intelligence become an increasingly significant component of the decision-making process for national policy. Mr. Dulles played a vital role in all of these developments, not only by virtue of his position as Chairman of USIB but also through the effectiveness of his leadership and the force of his personality.

Mr. Dulles' contribution to the community and the cause of intelligence has been extraordinary in other ways. Through his lifetime interest in intelligence, service under several Presidents and reputation for integrity he has long enjoyed the confidence and respect of statesmen and world leaders, both at home and abroad. Perhaps no American has done more than he to enhance the stature of intelligence as a profession.

But those who worked closely with Allen Dulles will probably remember best the impressive personal qualities which he brought to his profession. A man of broad interests and long experience in foreign affairs, he combined a penchant for scholarship with a sound instinct for the practical. Articulate, objective and fair-minded, he encouraged honest dissent without sacrificing principle or personal convictions. We note that his unusual talent for intelligence estimating, first apparent when he published an appraisal of the Boer War situation at the age of eight, has long since been duly recognized by Presidents, Prime Ministers and Kings.

In sum, throughout his career Allen Dulles epitomized the qualities of an ideal intelligence officer. His colleagues on the United States Intelligence Board, his country and the Free World will long remain in his debt.

Possibilities of the new "programmed learning" in application to intelligence training.

COMES THE TEACHING MACHINE

At last the technological revolution, by which luxuries or available only to the wealthy few and new marvels undreamed of even by them become the common birthright of the mass is about to invade the classroom and despoil the sanctuaries of a relationship between instructor and student essentially inviolate since the days of Aristotle. This relationship, reflected in the age-old image of a teacher discoursing to a group of students, represents quite precisely an educational philosophy to which everyone has more or less adhered for generations—that the teacher's responsibility is to teach, and learning is the student's job. The teacher should know his material thoroughly, organize it clearly, and present it effectively. In the United States, by exception, the good teacher is supposed also to answer any reasonable questions put by his students and to be generally helpful and encouraging; but there his job ends. It is up to the student to master the material, think through its implications, and apply it in practice.

This philosophy holds it important that the student should have his responsibility for the effort to learn. To that end teachers have been wont to confront him with challengingly difficult materials in order to stimulate him to "pay attention," "think on his own head," and "develop good study habits." It is therefore only those who really do pay attention, use their heads, and develop at least acceptable study habits that succeed in obtaining a degree of superior effort or natural ability in getting over the academic hurdles; and such a system, in effect, thus selects rather than trains good students. It is ill suited for bringing the luxury of education, like those of the electric can-opener, automatic garage doors, and armchair-controlled television, within the reach of Mr. Everyman. That is why we in the United States, in our efforts at mass education, have con-

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promised somewhat with the old philosophy, especially in the public schools. But not enough.

For mass education is no longer a luxury from the standpoint of the society, the nation. At a time when its survival may depend upon the skill of some radar technician standing his lonely watch over complex electronic equipment on the DEW line, when the tenfold increase since World War II in the intricacy of the armed forces' equipment requires that a draftee spend half his enlistment time learning his job, when the diverse branches of science have become so sophisticated that it takes an interdisciplinary specialist to communicate among them, it is not strange that the nation is examining with cautious hope a new philosophy of instruction that promises to teach men better in a shorter time. The new philosophy reassigns the main burden of responsibility for the student's learning to the teacher. If a student has trouble it is no longer quick to conclude that he is probably lazy or isn't paying attention or has poor aptitude for the subject; it assumes, rather, that there may be something wrong with the instruction.

The changed philosophy finds its implementation in a new method, one characterized by the effort to lay out in sequence all the elemental steps by which a student can best be brought to mastery of a particular subject, to capture these on paper, tape, or film, to refine them by trial and error, and to present them to the student by mechanical devices—unconventional textbooks, simple machines costing a few dollars, or elaborate devices with some of the characteristics (and price tags) of electronic computers. Machine costs aside, however, the initial application of the method to a new subject—the development cost—is, as we shall see, high, and it is therefore logical that advanced experimentation with it can most easily be done, as most of it has been, in the large commercial enterprises and government agencies that have greater financial flexibility than the public schools and universities. The intelligence agencies, with their peculiarly high requirements for many different kinds of training, should be in the forefront of this movement.

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Origins of the System

The acknowledged father of the now burgeoning innovation is Dr. B. F. Skinner, a Harvard University psychologist who had spent years in the laboratory studying how animals learn. One day, he tells us, he visited his daughter's arithmetic class and watched the teacher drill the children in their sums, some of them staring out the window, others stirring restlessly in their seats. The teacher could present only one problem at a time to the whole group and ask one child to answer. Perhaps half the class already knew the answer and needed no drill on it; and for the rest, who's to say whether any of them thought through to the answer before the unlucky one was named? In classroom drill the well prepared are bored, and the ill prepared fall, perhaps unknown to the teacher, farther and farther behind.

Dr. Skinner went home that night convinced that by applying principles he had discovered in his laboratory he could teach his daughter arithmetic a lot more efficiently than the most competent of teachers using the classroom method. In teaching a dog to touch his nose to a doorknob, for example, he had shaped the dog's behavior by rewarding him first for the roughest approximation of the act and then refining his performance in successive trials until the animal did exactly as desired. The trick could be taught in this way in a matter of minutes. Using this and other learning principles, Dr. Skinner had within a few days devised the first modern teaching machine.

Through a small window the new machine presented a bit of information which the child would be fully prepared to understand and asked a question to verify his understanding, for example:

Just as $1+2=3$,
so $2+1=$ _____

The child would respond by writing the sum in the blank and would then advance the machine by turning a knob. This would put his written answer under glass, where he could still see it but not change it, and at the same time expose the correct answer to check his work. If it was right, he would then advance the machine to the next problem.

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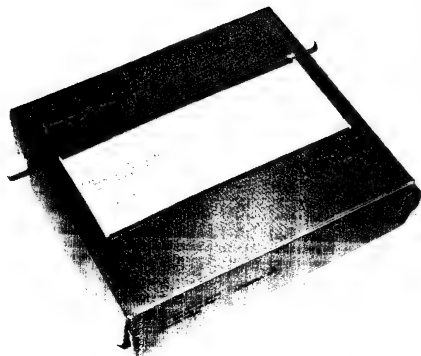


FIGURE 1. Simple Skinnerian-type machine.
Book-sized, it is priced at \$5.

The series of problems framed by the machine constitute what has become known as a program, in which hundreds of frames present the material to be learned in very small steps, starting with what is familiar and introducing new information in morsels that can be readily digested, building upon these in turn and interlacing all until the student has a thorough understanding of the subject matter, its details and their interrelationships, however complex they may be. Because each step is small, he rarely makes mistakes, and he has constant assurance that he is mastering the material. And since the machine is neither in any particular hurry nor waiting for others to catch up, he can work his way through the program as fast or slowly as he likes.

Since 1958, when Dr. Skinner published an article in "Science" which aroused the first wide interest in auto-instructional methods, hundreds of businesses have experimented with programs and teaching machines, hundreds of thousands of dollars have been invested in the design and production of automatic teaching devices, and hundreds of programs—

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some for courses covering an entire academic year—have either been published or placed in development. Programmed instruction has been hailed as the first educational breakthrough since the invention of the textbook two hundred years ago, and there's hardly a responsible training director anywhere who isn't following closely its rapid evolution.

Programming

Instructional programming has sometimes been described as an attempt to apply the science of learning to the art of teaching. Psychologists in their laboratories have for years been developing the science of learning, but this work has been analytical, studying separate aspects of the process rather than synthesizing the whole for practical application. A good program writer not only has to observe the psychological principles that call for the presentation of a single step at a time, student participation, and immediate "reinforcement" by verification; he must also know how to break the subject down into small steps, order them properly, provide enough cues to give the student a good chance of getting the right answer but not so many as to bore him, introduce just the right number of review items and at the right intervals, lead the student to integrate the items he has learned, and gradually wean him from prompts until he is doing what he is being trained to do all on his own. Thus far the experimental laboratory has done little to provide guidelines for the programmer.

The program, however, is susceptible of empirical testing and corresponding adjustment, and in this capacity for self-improvement seems to lie the reason for the dramatic successes scored by the embryonic art. Once a program has been written, regardless how crude it is, it can be tried out on a student. As the student hesitates, becomes confused, and makes errors, the writer can trace the trouble to ambiguities and other faults in his program, clear these up, and try it out again on another student. Experience has been that about six such shake-downs are usually required to weed out the major instructional errors. Then the program can be tried on groups of students and improved and refined by revision after each trial. In this way programs which teach the same material in half the time of conventional instruction have been developed.

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At first almost all programs were of the Skinnerian kind, now called "linear," described above, but recently an increasing number of another type, called "branching," are being written. This type, presenting a larger unit of information in one step than the linear, tests the student by having him select the right answer to a question from among several that reflect common misunderstandings. If he chooses correctly, his answer is confirmed and he proceeds to the next unit; if not, he may be "branched" to a whole sub-sequence of frames designed to remedy the lack of understanding indicated by his particular wrong choice before coming back to this point for another try. Whereas the linear program minimizes student difficulties by keeping the steps small, the faster branching type diagnoses them as they occur and provides additional help to those who need it.

Results

The effectiveness of programmed instruction can be illustrated in the results of two studies, one for a linear and one for a branching program, typical of the many that have been carried out. At IBM a psychologist and a subject-matter expert spent six or seven months programming the first fifteen hours of a sixteen-week course in maintenance of the 7070 Data Processing System, an enormously complex electronic device. During a series of classes the work of 70 trainees who were given the programmed materials was compared with that of 42 others who had been taught by the usual lecture-discussion method. The results all favored programmed instruction. None of the 70 took longer to complete the programmed materials than the 15 hours required of everyone who had the conventional instruction, and the average was about 10 hours, saving a third of the class presentation time. In an achievement test the programmed group earned an average score of 94 against 87 for the conventionally taught group, and 67% scored 95 or above, as against only 12% of the others. The students also had a favorable attitude toward the new type of instruction, 87% preferring it to the conventional and all of them recognizing that it was more effective.

The most ambitious try-out of programmed instruction to date is being made at Keesler Air Force Base, the main electronics training center of the Air Training Command. There

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FIGURE 2. Machine for miniaturized multiple-choice branching program. \$1250.

most of the 13-week course in basic electronics principles is being programmed in the branching style and the work of matched groups of students taught exclusively by machine and by the old method are being compared. In the studies made so far the experimental students have all taken less time than that allotted for the presentation of the material in the conventional class, averaging perhaps two-thirds of this. In mastery of the subject, as measured by an 80% written, 20% practical final examination and by performance in advanced work, there seems so far to be no distinction between the experimental group and the others.

Other studies have reported similar results. Time savings have varied from ten to fifty percent. In quality either no difference has been detected or, more typically, the programmed instruction has been found the better. Almost all studies have reported varying degrees of enthusiasm and preference for the new method among the students.

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Problems

The main obstacle to the use of programmed instruction is the cost of preparing the programs. Very few ready-made programs are on the market so far, and standardized programs would in any case not do for many training activities, especially in intelligence, that have their own peculiar problems. A training director can expect to pay a contractor about \$1,000 per hour of programmed instruction for development alone, in addition to the cost of reproducing the usually bulky materials and of whatever machines he decides to use. In-house staffs might do the programming, but it would take at least a month to train a programmer and one to four weeks of his time to prepare each hour of instruction.

Although the initial cost is high, however, the operating costs are usually insignificant compared with those of conventional instruction. Once the programmed materials have been developed and reproduced, the only major expense is for keeping them up to date. A ten-hour course that costs \$10,000 for development, \$4,000 for printing, and \$100 a month for up-dating, if spread over 1,000 students in a year's time, will amount to only about \$15 per student. Moreover, when student employees take less time to learn, there is an extra bonus in their salaries for the time saved, not to mention the overhead for the classrooms and the instructors' salaries. Travel costs may also be reduced or even eliminated by sending instructional materials to the field instead of bringing the student to headquarters.

At Keesler AFB, for example, the Air Force is spending a substantial \$165,000 for developing approximately 13 weeks of machine instruction. But this instruction, which can now be duplicated and sent almost anywhere, will have a development cost of only one dollar per student hour if as many as 410 students take the course. Thus programming promises to reduce costs when the training is to be offered a sufficient number of students and when the subject matter does not require frequent up-dating.

There are other problems of a management kind that a training director will encounter in introducing programmed instruction—its impact on his instructors, who may be apprehensive about technological unemployment and in any

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case will have to adapt themselves to a new role with the students; its impact on students, a few of whom may feel ill at ease with machines and for the brightest of whom even the branching program may be too slow and boring; its effect on enrollments in voluntary training and correspondence courses; the best way to begin trying out programmed materials; whether and how the self-tutoring materials can be integrated into a regular course. So far there is little experience to guide him on any of these questions.

One problem about which there is current controversy is whether it is preferable to adopt the programming principle without using a machine. The principal purposes of the machine are to prevent the student from seeing the answer until he has come up with his own solution and to keep score of his errors. If the instructor is willing to sacrifice rigor in these respects, he can give the student a specially arranged textbook in either of two forms. In the "programmed text" for linear programs the student must turn a page to see the correct answer at each small step; he is expected to discipline himself to write down his answer before he turns the page. The "scrambled book" for the branching type of program presents each new segment of information, a question, and multiple-choice answers on a single page and refers the student to a different page according to the choice he makes.

Proponents of the machine point out that it not only prevents peeking but gives the instructor dependable measures of student progress, enabling him to test as well as to teach. With miniaturization it provides much more training capacity per unit weight of programmed materials, they say, greatly reduces the cost of reproducing the materials, and adds a certain fascination to the process of learning. Recently the Air Force Academy bought 50 machines costing more than \$1,000 each for use in programming a large share of its academic courses. Experimenters at Recordak Corporation have developed an elaborate and highly flexible device which they are trying out with apparent success in a great many of the parent Eastman Kodak Company's training programs.

Advocates of the programmed text, on the other hand, point to several studies which appear to establish an advantage in speed and convenience for their simpler device. A textbook

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can be easily carried about and used anywhere, has no moving parts to jam or bewilder the inexperienced, and can be reproduced easily on a ditto machine. Publishers have been quick to seize on the advantage of a vehicle that offers most of the benefits of the machine without requiring additional equipment: programmed texts in algebra, trigonometry, vocabulary, basic English, statistics, psychology, and many other subjects have been introduced to the market and have been widely sold.

Range of Application

Despite these and other problems associated with programmed learning, its advantages are sufficiently evident to have elicited serious consideration in many fields. Its range of applicability seems to be very wide: theoretically, any subject can be programmed if you can be explicit about just what you are training your student to know or be able to do. Most of the subjects taught in our schools, in industry, and in government could be programmed. The commercial researchers have experimented with courses in the technical, manufacturing, clerical, sales, and management fields. The Recordak experimenters say they have been unable to find any industrial training subject that could not be programmed.

Self-teaching materials offer a greater amount of administrative flexibility than may at first be realized. Using them, an individual isolated in some remote place could maintain his proficiency in rarely used skills or add to insufficient skills. They could be used in correspondence courses for employees too busy to attend formal classes. They could take care of excess enrollments when not enough instructors were available. They could be used to check proficiency in the prerequisites for an advanced course. By freeing an instructor of routine teaching, they could contribute significantly to his ability to keep up with his field and give students individual help. They could constitute for a training director a definitive statement of training standards. And they have been found to exercise a remarkably stimulating effect on the instructional staff, who cannot fail to be influenced by the example they set.

There seems no reason to doubt that all of these advantages carry over into training in intelligence subjects, and some-

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times an additional advantage in the possibility of avoiding security problems by separating instructor from trainee. All that is needed to see the possibilities in intelligence training is an understanding of the nature of programmed instruction and a lively imagination. The following paragraphs suggest at random a few applications to instructional problems in this field.

Intelligence Applications: Overt

"When you go into a new job you are suddenly surrounded by the language of that job, and the initial phases of most of our orientation programs are really devoted to the language of the job. We think we might teach the terminology of an operation by programmed learning and . . . speed up the entire orientation."¹ In the intelligence community, too, self-instructional materials might improve the effectiveness of our orientation courses. They could also serve, if circulated after every major revision and kept on library shelves for general reference, as a convenient means for keeping everyone up to date. One particular aspect of the orientation program, the security lecture, because its lessons must often be relearned in the school of hard knocks, might be especially important to put into programmed form. If the program were given by machine, it could guarantee that every employee had faced and solved every security problem deemed necessary, and had done so before being given any security responsibility in his agency.

In almost all administrative procedures, particularly those involving paper work, answers to the common problems have been agreed upon and the preparation of programmed materials should be easy. At Lackland Air Force Base a four-hour course in filing took only two to three hours of student time after programming. All kinds of record keeping could be programmed—accounting, inventory taking, supply procedures, fiscal systems, routing practices, and so on.

In processing the steadily increasing volume of incoming information, as the community turns more and more to standard reporting formats, common coding, and uniform dissemination,

¹Jerome P. Lysaught, Director of Training, Eastman Kodak Company, in *Programmed Learning* (Ann Arbor, Michigan, 1961).

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nation procedures, there is a developing opportunity for inter-agency training in these procedures. They should lend themselves readily to programmed instruction, and the more trainees there were the more economical it would become.

Reference librarians find it a full-time job keeping up with the variety of publications and other documentary sources to which they guide analysts, and a new analyst may have so much thrown at him about library facilities that it takes him months to master full knowledge of his sources. Here programmed instruction, centrally prepared and continually updated for the community as a service of common concern, could make an important contribution to the accessibility to intelligence of government-wide reference facilities.

One can only hope that eventually some of the techniques of programming may be applied with advantage to training in the interpretive skills of economic, geographic, scientific, and other kinds of analysis. At present we know too little about the processes of judgment through which an interpretive conclusion is reached to be able to teach them with precision, and explicit precision is needed if a subject is to be properly programmed. The analyst may, however, need refresher training in subjects like the manipulation of statistics and the use of the slide rule. Many such courses have been or are being programmed and will be available for self-instruction. Others that were needed could be developed.

In the communications field, subjects to which auto-instruction is applicable range from sending and receiving Morse code to the operation of a master console, from typing and teletyping to the maintenance of complex equipment. In these and many other communications jobs the behavior to be learned can be explicitly described, and it should be a simple matter to apply the insights gained from years of tutorial experience to the preparation of a trial program. From there on, a series of try-outs, followed each time by improvements in the program, should eventually produce self-instructional material of a high order of effectiveness. The branching style of programming was actually evolved in support of efforts to find an effective way to teach Air Force technicians to spot troubles in electronic equipment.

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Auto-instruction in maintenance, trouble-shooting, and testing need not be limited to communications equipment. Equipment of any kind bought in quantity on the open market, no matter how complex, could be tested by a technician without special skills. Each step in the testing process could be photographed and presented by slide projector to the tester. Earphones could remind him what to do next, and the whole process could be so detailed that there would be no need for him to rely on experience or memory. Such devices are now being used with great success by the Hughes Aircraft Company to guide assemblers of electronic equipment.

It should even be possible to program the teaching of cable and report writing. Besides matters of format like the use of symbols, terminology, headings, and word order, more complex skills such as writing briefly and with a minimum of ambiguity could with a little ingenuity be programmed. The trainee would not develop an individual style, but the desideratum seems to be a highly standardized language in which the number of acceptable ways of expressing an idea is narrowly limited.

Map reading and map interpretation, in which intelligence personnel often lack proper training despite its basic importance, should offer no real obstacle to programmers. Instruction in this subject is so widely needed that its programming should rapidly pay for itself many times over.

Covert Applications

Programmed instruction might be used with particular felicity on an agent undergoing training in a safe house. Training in observation and description, for example, with little time and opportunity to practice observation, might present an almost insoluble problem. But a self-instructional program could, by gradually making the discriminations more difficult and withdrawing prompts, bring him to whatever level of accuracy in observation is desired. It should be possible to prepare programs which would improve the agent's ability to judge heights, distances, colors, textures, materials, sounds, weights, and speeds.

If it is not wished simply to improve an agent's general powers of observation but to give him a specific ability to ob-

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serve and describe, say, synthetic fuel plants, airfields, or naval ordnance, he needs to be taught the critical things to look for and the words to use to describe them. Programmed instruction should be able to do this sort of training very effectively, imparting any required level of competence. A program for training agents to observe and describe people is currently under development.

Programmed instruction can be successful in teaching agent skills as well as sharpening discriminations. There is no reason, for example, why lip-reading cannot be programmed by providing life-like examples, probably short motion-picture sequences. Or it might be convenient for the agent to be able to take shorthand notes; either a simplified or a professional-level skill in shorthand could be acquired by programmed instruction. As a matter of fact, it seems theoretically possible to develop through programming an ability to note down anything that may be said in any language without necessarily understanding it—a matter of recording sounds rather than meanings.

It has been shown that it is possible for a student to learn at least the basics of a foreign language through programmed instruction. One course now on the market, for example, permits the student to develop, without an instructor and at his own pace, "a clear idea of Spanish sound patterns, the ability to understand, speak, and write simple Spanish, an active vocabulary of over 500 words, and an acquaintance with the basic structural patterns of spoken Spanish." In the Army's Human Resources Research Office at George Washington University adults of average intelligence, after about four weeks of intensive study, using only tapes and programmed textual materials, acquired enough skill in speaking and understanding Russian to interrogate "prisoners of war" in that language and obtain from 85 to 97 percent of the required information. If an agent needed to develop quickly a facility, say, for understanding the common speech of a foreign country, he might be furnished programmed instruction in it.

Another kind of skill it might be desirable for an agent to have is the reading and interpretation of instruments, whether a simple pressure gauge or the master display at a regional command center. A report on self-instructional pro-

grams for SAGE system operators published last spring shows that programmed instruction is suitable for such a complex skill as track monitoring and direction finding. The SAC operator skills include reading symbolic information on flashing display, knowing where to reach for various buttons and switches on the console, and knowing when and under what conditions certain actions should be taken. The self-instructional materials produced a higher level of achievement (87%) in fourteen hours than had previously been attained (81%) after more than a year on the job.

It might be worth while to program an agent's cover story. If it had to be worked out uniquely for each agent, the effort would probably not be worth the advantages; but it may be that, once a particular cover story were programmed, a number of others could be substituted, *mutatis mutandis*. The questions would largely remain the same; the answers would change. If this were true, auto-instruction for cover stories might eventually be prepared in advance and supplied as needed. At least orientive material supporting cover, like the geography, customs, and monetary practices of some country, could be programmed for thorough learning.

The equipment would not always be so elaborate as to require a safe house. Programs that teach visual discriminations or recognitions or verbal skills not including the ability to speak can usually be presented as a programmed tape which the agent could use in his own quarters. Programs that teach the discrimination of moving parts, such as lip-reading, or of sounds, as of engines or airplanes, must be presented by a teaching machine, presumably in a safe house; but miniaturization, together with increasingly widespread use of the machines, may eventually make it practical to put such equipment into the agent's home. Technical advances in programming hardware promise that we soon may have devices to reproduce programs quickly and inexpensively in small, easily handled packages.

The application of programmed instruction to intelligent training has only just begun. The examples above may suggest some of the possibilities, but there are undoubtedly many other ways in which this new kind of teaching can enhance

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our intelligence effort. In the days of crisis current and to come, the key role of intelligence gives it more need than ever to make sure that its personnel are well trained. Programmed instruction offers means of substantially improving some of our training. It is worth serious examination.

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INTELLIGENCE IN RECENT PUBLIC LITERATURE

ANATOMY OF SPYING. By *Ronald Seth*. (London: Arthur Barker. 1961. Pp. 256. 18/-.)

Ronald Seth, prolific British writer in the popular history of wars and espionage, has had some personal experience in the field. He was trained comprehensively by the wartime Special Operations Executive and parachuted on a lone mission into German-occupied Estonia, where after losing his radio and wandering in the woods for twelve days he was picked up by the Gestapo. He successfully withstood a three-hour hanging by the genitals and other tortures and, taken then to Germany, was able to deceive his interrogators as to his linguistic skills and into believing that he was cooperating with them. This experience lends some realism to his otherwise too facile and uncritical pluckings from the annals of espionage.

In this latest compilation, although its title and the chapter headings—Organization, Security, Communications, Counter-Espionage, The Double-Spy, etc.—give it the aura of a doctrinal synthesis based on historical example, these really serve only as a framework upon which the author can hang episodic capsules ranging from Odysseus' wooden horse to Powers' U-2 mission, most of them repeated from his earlier books. The reliability of his case history presentations can be gauged in two from the American Revolution and Civil War, respectively. Edward Bancroft, the British agent who penetrated at top level Benjamin Franklin's mission to France,¹ he puts into the "despicable" category of double agent, "no less a scoundrel than Montgalliard," the French Royalist-Republican double operator. And in the Civil War he inflates the role of Lafayette Baker quite beyond recognition:

One of the most brilliant natural spies of history, . . . Baker volunteered his services . . . and to him Pinkerton, with great relief, handed over the direction of espionage and counter-espionage. . . . Under Baker, the role played by both espionage and counterespionage services in the North's ultimate victory was a considerable one. . . . In Baker's make-up, however, . . . the

¹ See John P. Vaillancourt's "Edward Bancroft (@ Edwd. Edwards), Estimable Spy," in *Intelligence Articles* V 1, p. A53 ff.

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Recent Books

traits peculiar to the adventurer . . . unfortunately . . . became predominant and . . . this led directly to the assassination of President Lincoln. . . .²

Seth devotes his introduction and his final chapter to the case of Francis Powers, "condemned by his own superiors before he was ever brought to trial by his captors." He commiserates with American agents, who "must have had their morale assailed by secret doubts about the good faith of their masters." If the spy in trouble sees that his masters "give evidence against him gratuitously, the unsteady ground on which he habitually walks must become a veritable quicksand." The author concludes that Allen Dulles "is not in the tradition of the great spy-masters," whether because he sanctioned the public statements about the U-2 flight or because he "is not the unfettered chief of the CIA that he should be," having "no powers to prevent the politicians from making him and his organization look ridiculous."

THE DEVIL TO PAY. By *Jack Youngblood* and *Robin Moore*. (New York: Coward McCann. 1961. Pp. 320. \$4.50.)

In writing of his experiences as a pilot for Fidel Castro's guerrilla movement, Mr. Youngblood has not set out to enlighten future scholars delving into Cuba's revolution, but rather to make a few fast bucks to sustain the style of living that he so eloquently describes as his. Written almost entirely as an adventure story, his book attempts to portray its author as (a) a highly proficient and successful airborne soldier of fortune, (b) a smooth operator with women, and (c) an astute political analyst. There is no question but that he qualifies in the first category, as the records of U.S. intelligence agencies must attest. There is available no independent confirmation of his amatory prowess, however, and his perceptiveness in political matters can best be described as colored retrospect.

The book is entertaining in a Terry-and-the-Pirates way, and is not without some piquant expositions of paramilitary tradecraft. It would not be surprising if it had become re-

²For a realistic assessment of Baker's work as head of a small local detective bureau without even responsibility for the protection of the President, see the review of Jacob Mogelever's *Death to Traitors* in *Intelligence Articles* V 3, p. A38 ff.

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quired reading for certain officials of the U.S. Border Patrol, the FAA, and the Air Defense Command, who would like to know how the author evaded their controls on at least one flight in a battered C-47 from Mexico City to Philadelphia and return.

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THE STUDIES IN INTELLIGENCE AWARD

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Outline of a proposed community system linking diverse mechanized files of biographic information, with particular attention to the problem of name variants.

A NATIONAL NAME INDEX NETWORK

Walter Jessel

The development of automatic processing systems has now opened up the possibility of constructing a central facility that would provide quick access to information on foreign personalities stored anywhere in the intelligence community. The establishment of such a center would not require pooling the information itself; compartmentation and need-to-know security should be maintained by linking electrically the indexes of individual agencies housed separately in computers programmed and operated by their own personnel. The new permanent facility would be only a switching and message center with a medium-sized computer storing names in alphabetic and phonetic look-up tables. Intelligence officers and systems engineers representing their parent agencies would form a committee to keep programs and equipment compatible and the look-up tables up to date. If work were to commence in all agencies by the middle of 1962, the center could be in partial operation by 1965.

A proposal that we take advantage of this opportunity has been presented to the USIB Committee on Documentation. If we are to do so, we need a long lead time and much preparatory effort to reap the evident benefits. In particular, we need to begin immediately to capture in machine language, as on punched cards or paper tape, the typing of biographic index cards or forms in agencies that consider themselves potential participants in the system.

The scope of beneficial participation cannot be outlined in this paper with any precision. The writer's perspective derives from the counterintelligence field, in which files are most frequently checked for security information, but he sees no reason why the principles of index organization and information handling outlined below might not equally be applied to positive biographic intelligence. In practice, the dividing line between

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tween the two is elusive; we have long since given up the quest for a durable definition of the term "derogatory information."

The great bulk, however, of name searching activity in the intelligence community—responding to thousands of requests daily—is initiated to determine whether, in the records of any one of a number of government agencies, there is information of a nature to preclude employment, the receipt of a grant, the issuance of an immigration or a visitor's visa, entry into the United States, an invitation to a conference, etc. Only in a fraction of name searches is such information discovered; most people are quite all right.

Using modern communications and data processing tools, the community can rid itself of at least that mountain of paper work which now piles up merely to determine that there is no pertinent information of this kind. It should be feasible to get such negative answers routinely in an hour or less. Much government business would then proceed promptly which is now held up for weeks. Many people the world over who want to serve or visit the United States would be relieved, impressed, and grateful.

The proposed community coordination, furthermore, should raise the quality as well as the speed of name tracing. Present methods, as we shall see, are not as effective as may be generally believed: because of inevitable shortcomings in manpower and qualifications and through the inroads of human error, there is a fair amount of information in the files which cannot be found. But techniques which can produce more comprehensive and reliable replies to inquiries about people are becoming available; and these techniques, once developed and applied to a single large biographic index, can be simply and inexpensively adapted to others without violating the rules of security compartmentation.

The CIA Counterintelligence Index

CIA's counterintelligence responsibility includes the maintenance of biographic information on persons of security interest to the United States abroad. An extensive system of dossiers and reports with card indexes to them, begun by CIA's predecessor organizations, has been built up over the years. As the collection grew it tended to become unmanageable both

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with respect to maintenance and as to the speed and quality of responses to inquiries. These difficulties led to changes in procedures and to intensive studies and experimentation on methods of mechanization. Work on automatic systems both for indexing and for document storage and retrieval has been under way since 1957.

Here we are concerned only with indexing. Under a systems contract with IBM, engineers aware of prospective developments in automatic equipment have cooperated closely with intelligence and systems personnel in CIA, so that the study has not been limited to equipment already on the market. The resulting planning calls for mechanization of the biographic index by 1964, using equipment which will be available by that time.

The mechanized index replacing the present many million cards will store between two and three billion alpha-numeric characters. Random access will permit a computer search to proceed directly to any position in this storage.¹ There has lately been an average of 1,000 inquiries a day into the card index; the mechanized system is designed to handle 2,000. The cards are arranged alphabetically; the computer makes practical other techniques of index organization that will render findings more reliable.

Organization by Phonetic Group

From the *Washington Post* of Dec. 16, 1961:

NEWSPAPER STUFF

Reuters said that Nazem Kudsi had been elected President of Syria. The Associated Press wrote it Nazam el Koudsi. UPI said it was Nazim Kudsi. Our world desk checked with Syrian diplomatic representatives here. They said the correct transliteration is Nazem Coudsi. We took their word for it.

¹ For a general description of the use of computers in automatic data processing, see Joseph Becker's "The Computer—Capabilities, Prospects, and Implications" in *Studies* IV 4, p. 63 ff.

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As this little story suggests, the key problem in organizing an index of references to people anywhere on the globe, more often taken from a foreign language than from English, is the variant ways in which identical names may be reported, spelled, transliterated, or translated. It takes a strong linguistic background to make an effective search of an alphabetically organized file. Phonetic rules may be reasonably useful in straightforward transliteration from a foreign language, but they fail when, shall we say, the name of a Polish member of the Laotian truce commission is reported by a Lao through a French intermediary to our embassy in Vientiane.

If name variant searching is an intricate task for trained experts, how can a computer be taught phonetic rules? We attempted to develop a phonetic system suitable for programming. It bogged down quickly as we learned that logical rules could not be formulated to deal with the unpredictable name spellings in many languages in the index. A grouping scheme which is controlled by the judgment of expert linguists was then adopted. This is how it is set up:

When we began to think about the possibilities of mechanization some years ago, we took an essential first step to make the use of computers possible. The section which produces our 3x5 index cards was equipped with Flexowriters, electric typewriters which punch a communications-type paper tape in the course of normal typing. This paper tape can be converted to other media carrying machine language, including the magnetic tape commonly used for the input to computers.

From this machine language version produced simultaneously with our 3x5 cards, a computer extracted surnames and given names separately, pulled them together by area of origin, and alphabetized them. Then it punched out one IBM card for each spelling of every surname and of every given name originally typed. We thus obtained one card each, for example, for Mueller, Smith, and Kim, and one each for Fritz, William, and Alexander.

The linguists working on our grouping scheme go through these IBM cards for like-sounding surnames and for equivalent

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lent given names. They pronounce the names, often aloud, and those that to their ear and mind belong together they assemble behind a card bearing a serial number. This assigned group number provides the linkage among name variants that is needed in filing and searching. The grouping process is a vast game of solitaire in which little writing takes place, merely an arranging of punched cards. Machines do the processing and printing, leaving the linguists to use their expertise free from boring clerical routines. The approach is completely pragmatic: only names which have actually been reported are included in the groups. Theoretical possibilities do not interest us; we have no need to search for them.

Tables 1 and 2 below contain groups of surname and given name variants, respectively, each designated by the collective serial number assigned it.

003626	CHEVCHENKO	Z63228	ALEX
	JEVCHENKO		ALEKS
	SCHEVCHENKO		RELA Z00029 ALEXANDER
	SHCHEVCHENKO		Z00116 ALEKSEI
	SHAVCHENKO		
003630	CHIGVINTSEV	Z00029	ALEJANDRO
	TSIGVINTSEV		ALEKSANDR
	TSIGVINTSEVA		ALEXANDRO
			ALEXANDER
			ALYA
002170	KRCMAR	Z63228	OLEKSANDER
	KRETSCHMAR		SANDOR
	KRETSCHMER		SASCHA
	KRETSCHMER		SHURIK
			RELA Z63228 ALEX
002170	KRCMAR	Z00116	ALEKSEI
	KRETSCHMAR		ALEKSEI
	KRETSCHMER		ALEKSEI
	KRETSCHMER		ALEKSEI
			ALEKSEI

TABLE 1

TABLE 2

In the computer these names, each with its group number, are reordered alphabetically, as in Table 3, so that the machine in beginning a search can get the group number from an alphabetic look-up. (For explanation of the search procedure see p. 10 below.)

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003625 CHETVERIKOV
 003625 CHETVERIKOVA
 505716 CHETVERNIA
 520151 CHEVALLIER
 505717 CHEVARIN
 003626 CHEVCHENKO
 520152 CHEYRON
 000414 CHEYSHVILI
 000414 CHEYSVILI
 003610 CHIBANOFF
 526539 CHIBAS
 505718 CHIBIKOV

TABLE 3

The name variant problem is of course most complex when transliteration from other alphabets is involved. Linguists, in their minds, retransliterate what they see to the original spelling, and this spelling governs their selection of variants to form a group. No effort is made to designate a correct transliteration; it has no bearing on the performance of the system, which accommodates any transliteration and even outright misspellings like the JEVCHENKO in Table 1. The groups of variants are flexible. They may be split or combined as experience and professional understanding of the system's needs may dictate.

Variants of the names of public figures who write them in the Latin alphabet, on the other hand, are unimportant. In looking up the German chancellor, there is little point in subjecting the name ADENAUER to a phonetic variant treatment. For such searches the system will permit bypassing the name grouping feature so that the machine yields only records of names which exactly match the spelling in a request. The extent to which such an option will be used by requesters will depend on the amount of irrelevant information otherwise produced by the system.

The grouping of names in an empirical phonetic order is hardly original; the British MI-5 index, for one, was organized in this manner decades ago. The method is eminently suited

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to the counterintelligence problem. As people move around they adjust the spelling of their names to new surroundings; phonetic reporting is normally unreliable; and in transliterating from one language to another, several different standard and non-standard schemes are frequently used.

The Nonsense Bloc

We collect information about people in all parts of the globe. The chain of individuals who do the reporting and filing—agents, intelligence officers, foreign officials, typists, communications personnel, headquarters analysts, more typists, index clerks—can readily have a weak link, someone who lacks adequate knowledge of foreign languages and customs and who may thus confuse a surname with a title, an occupation, an honorific, or a given name. When this happens, the index reference is misplaced, and the information lost. Table 4 contains some of the words which have crept into our index as surnames.

RECHECK TRIGGERS	LANG	MEANING
O ALIAS	ENG	ALIAS
N BINBASHA	TURK	MAJOR
O EHEFRAU	GER	WIFE
N HAJ	ARAB	PILG. TO MECCA
O NADPORUCIK	SLAV	FIRST LT
O RECHTSANWALT	GER	LAWYER
O OBERSTLEUTNANT	GER	LT. COL.
N TERCERO	SPAN	THE THIRD
O VOPO	GER	E. GER. POLICE

TABLE 4

At first glance, this seems to show a sorry state of affairs. But when you look at it, how is an index clerk, a well-educated one, to know that NADPORUCIK is Serbo-Croatian for First Lieutenant and cannot occur as a surname? Perhaps he should know that FRAU means Mrs. and could hardly be someone's surname, but then a little knowledge could lead him into quite a trap: there are seven people listed in the Washington phone book by the name of MISTER, and 20-odd by the name of HERR. Anyway, we cannot expect to have a reporting

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chain of universal linguists, one of whom will not occasionally let a SONDERFUEHRER creep into the index.

Our linguists have now tagged all such words, summarily labeled "Titles," under two headings: "N" for those which may also occur as surnames (HAJ, PRINCE, GRAF), and "O" for those which may not (ALIAS, OBERSTLEUTNANT). The system can therefore recognize them and take precautions against their false entry as follows.

The name tables act as gates for new entries. The surname in a new entry to be filed must match a name in the alphabetic table, pick up its assigned group number, and then enter itself as a new member of the entire grouped set of references. If it finds no match, the machine prints out a notice to this effect to the editor, who assigns a group number after consulting his tables or the expert concerned and feeds it back into the machine. But if it finds a match in one of the words our linguists have identified as a title, the machine prints out a notice:

EDITOR. THIS WORD IS A TITLE IN THE XXXXX LANGUAGE, MEANING XXXXX IN ENGLISH. HOWEVER, IT CAN ALSO OCCUR AS A SURNAME. RECHECK REQUIRED.

Or:

EDITOR. THIS WORD IS A TITLE IN THE XXXXX LANGUAGE, MEANING XXXXX IN ENGLISH. ITS OCCURRENCE AS A SURNAME IS EXTREMELY UNLIKELY. REVIEW AND REWRITE ENTRY.

Because name order is often confused in reporting names in foreign languages, we are in a similar danger of losing information by filing index cards under given names instead of surnames. The machine therefore contains tables of common given names in all languages against which the surnames of all new entries are checked. If there is a match, the editor will receive a print-out as follows:

EDITOR. THE NAME IS A COMMON GIVEN NAME. GROUP NO. XXXXX CONTAINS ITS EQUIVALENTS. ADVISE RECHECK ON NAME ORDER.

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Particles which occur in surnames are tagged as such the linguists, and thereafter they are ignored in the machine internal processing. Thus, in one group, we will place

002874 /DE LA/ ROSA
/DE/ ROSA
/DE/ ROZA
/LA/ ROSA

By this device reporting inconsistencies are reduced to common denominator—the group number. But while

506784 WAGNER
WAGONER
/VAN/ WAGONER

will be found in one group,

507865 VAN NGUYEN THAN

is listed without tags enclosing VAN, which in this case is a particle. A computer rule to treat all occurrences of V as a particle would cause trouble.

Neither the phonetics of last names nor the translation transliteration of first names can be sorted into such clear-groups that all ambiguities are avoided. Furthermore, such groups tend to become so large that the reference output from them would be unwieldy. To cope with these problems, have introduced through the concept of "related groups" mechanized cross-reference scheme. It looks like this:

007878 'ASIM
GHASHIM
GHASIM
JASIM
KASEM
KASSEM
KASSIM
QASEMI
QASIM
QASSIM
RELA 008495 KAZIM

TABLE 5

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Retranslated into Arabic, KASSEM (and variants) is not the same as KAZIM. In transliteration, however, these are easily confused. The "see also" technique illustrated in "RELA 008495 KAZIM" draws attention to this possibility. This approach is useful in compiling tables of given names as well. In Table 2, ALEX abbreviates ALEXANDER as well as ALEKSEI, but the use of a single group for all of these would have been confusing.

Machine Search Procedure

When the system is established—beginning we hope in 1964—the name trace procedure will run as follows. The computer will first check the surname to be traced against the alphabetic table. If it finds a match, it picks up its group number and switches over to the element of the magnetic storage carrying that number. In the magnetic storage, which corresponds to the present 3x5 index cards, all records pertaining to all surnames in the same group are filed and searched in the same element.

The records under the surname group are then automatically sifted to match up given names or initials, age range, a country or countries of residence, sex, citizenship, document date and source, etc. All index entries that meet these criteria are now printed out in full text. The system is designed to complete one average search in about five seconds.

In addition to references, the print-out gives all name variants in the group searched, so that analysts using the index can suggest changes in group composition. The variants in related groups, if any, are also reproduced, but the records under these are not initially searched.

Having reviewed the output, the analyst decides whether to request a further search based on the content of related groups. At the service speeds we envision, he can afford to do this without loss of efficiency. Instead of taking the browsing approach to which manual searchers are often addicted, the machine searches according to strict rules, supplying only such alternatives as experts have previously decided are possibly relevant. The aimless and inhumanly dull blind groping through a card tray from end to end will, we hope, come to a stop.

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The advantages of such a machine search over clerical manipulation of an alphabetically organized collection of index cards are readily apparent. The index clerk, using all the knowledge and imagination at his command, can still hardly be expected, when asked for a check on RAHMAN, consistently to cover such variants—which have actually occurred—as RACHMAN, AB'ALRAHMAN, ABD AL RAHMAN, ABDAR-RAHMAN, and so on. The requesting Near Eastern analysts, knowing this, therefore tend to maintain elaborate crutch indexes to assure them of proper results independently of the central index. Professional personnel spend much time in this manner, and even they are hardly in a position to retrieve a reference in which a name has been misspelled or mistyped somewhere along the line.

The machine, without invading the province of human judgment, thus becomes a tool for improving the quality of our collection and our work in general. Expert judgment, once rendered, is repeatedly applied, no matter how much or how little an individual analyst or clerk may know, until a better expert comes along to make a change. The usefulness and the effect of expert knowledge are vastly broadened in this way.

The careful reader will have discerned a fair number of problems for which a solution is not apparent in this brief description. Much work remains to be done. One of the most complex matters is the treatment of Far Eastern names. In these, original ideographs are often represented by four-digit numbers, the Telecodes. We are likely to find that Telecodes can be used as the equivalents of group numbers, to supplement phonetic spellings. The complication is that many Far Eastern names are reported without Telecodes.²

The grouping process, which will go on in parallel with the conversion of the several million index cards to machine language, takes a great deal of effort on the part of linguistic experts. We are fortunate in having associated with us linguists whose knowledge spans the globe. We take satisfaction from the thought that, once done, this effort will not only lighten our own chore of running 1,000 name traces daily, but may be

² For an outline of the basic complications of this problem see Guy P. Webb's "Machines and the Chinese Name," *Studies* V 1, p. A29 ff.

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turned to advantage by others in the intelligence community as well.

Functions of the Network Center

The term "network" is used to make it clear that the system proposed in this paper does nothing more than relay inquiries about names and yes-no answers to them among the mechanized files developed individually by participating agencies. The network center does not deal with substantive information; it does no professional work except the maintenance of name look-up tables; it does not even see substantive information developed by a participating agency in response to a request.

A Pool of Name Tables

The gist of the proposal is to capture as a by-product of typing and machine processing a machine language version of all surnames occurring in the indexes of the participating agencies and to pool these in central computer tables. They are thus divorced from all other information held by the agencies concerned. The Center can then perform two functions: take care of the name variant problem centrally in the manner outlined above; and address inquiries to those agencies which, according to the central tables, have filed information on someone with either the exact surname queried or one of its grouped variants. Participants could, of course, direct their inquiries specifically to one or several individual agencies if they wished.

Look-up tables of given names and other elements like nationality would also be stored in the Center's computer. Their purpose is to supply the number or code that stands for the whole group of given name equivalents in each of the participating agencies' computer indexes and the codes designating other elements in each.

The grouping of names in the CIA counterintelligence index is apt to reach a plateau sometime in 1963, after which relatively few name spellings that have not occurred before will have to be dealt with. From then on, the Agency would be in a position to supply surname and given name magnetic tapes to the central computer in both alphabetic and group number order. Surnames filed in the computers of other network agencies could then be matched against those from CIA, and

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those that match tagged with a symbol for the filing agency. If there were no match on a name from another agency, a punched card would be produced which linguists would use to assign the appropriate group number, thus rounding out the Center's tables. In return for its list of surnames the Center would furnish the contributing agency computer materials—tapes and programs—for the organization and storage of its own index entries in groups corresponding to the surname tables at the Center.

A Search through the Center

The chart on the next page illustrates the Center's modus operandi. We may anticipate these steps:

1. Using a predetermined common format, a member agency teletypes its search request to the Center. It contains the usual elements—name, date and place of birth, sex, citizenship, residence, occupation, etc. It includes information for the member agencies' analysts to use when the computers have produced possibly relevant references—the purpose of the search, its intended depth, and any additional information about occupation, geography, events, etc. which will help in fulfilling the request.
2. When the message is in, the Center's computer first assigns the request a serial number which accompanies the processing of all its elements until an answer is returned.
3. Then it separates out the request elements that require matching against the Center's tables. The match on a surname yields a group number and a roster of agencies in whose indexes information on persons with such a name may be found.
4. Next the machine loads the complete request, together with the group numbers it looked up in the tables, into program converters for the member agency indexes that are to be checked. These converters are sections of the computer in which the common request format is transposed into that used by a participating agency in its own machine index. There is thus no need for total systems uniformity among the members.
5. Message assembly, transmission to the members' computing installations, and bookkeeping are the remaining steps in processing the search to the members' mechanized indexes.

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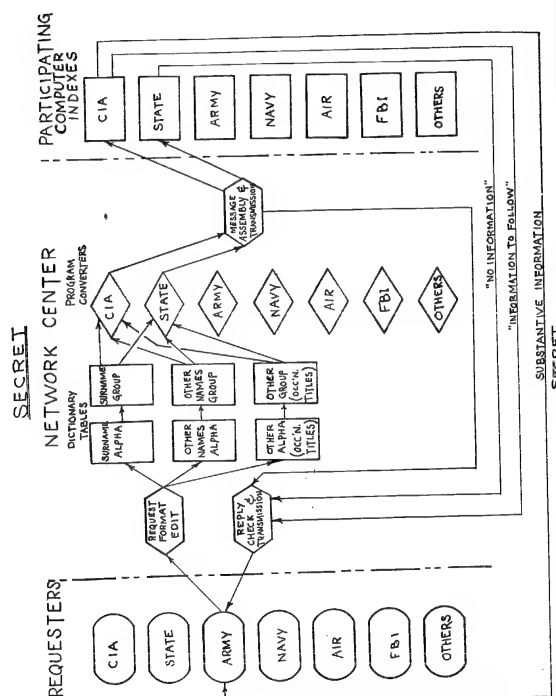
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6. An answer will be expected from each of the indexes addressed; a log entry in the "Reply Check" section of the Center's computer will call a Center employee's attention to delays beyond a reasonable time, say more than an hour. When the returns are in, the computer composes a message to the requester and transmits it. These answer messages are of two types only:

- (a) No pertinent information available, or
- (b) Possibly pertinent files are being reviewed; further information will come through normal, direct channels.

There are two possible sources for the completely negative (a) answer: One is the member agency's index computer itself, drawing a blank on the search criteria. The response in this case is automatic. If, however, the search yields possibly pertinent references, an analyst should rapidly scan these merely to determine whether it might be useful to consult documents or files. If not, the search ends at this point. A simple instruction from the analyst to the computer will give the requesting agency the answer (a) or (b).

Is It Worth Doing?

Mountainous computers have now labored and brought forth one of two mice—either a negative or a promise of something, which may in turn be negative, to come. Otherwise put, all we are suggesting is an immediate show of ignorance or an expedited review of pertinent information leading to the same sort of positive reply at present produced by analysts in all agencies. Will this cost too much?

The economy of computer systems is often a touch-and-go matter. With no information from other agencies available, we have, of course, no proper basis on which to make a calculation. However, let's play with some numbers anyway.

We do over a thousand name traces daily in CIA headquarters alone, and most of these are run as well in several other agencies. The community surely makes 15,000 trips a day to its Washington name indexes and files, not counting look-ups in overseas repositories (which our plans for the future include tying into the headquarters computer facility through electrical communications).

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It appears to take us about an hour under our present manual system to do the average name trace. The community's aggregate manpower commitment to name tracing is thus apt to be around 15,000 man/hours daily. However, the 10 or 15% of traces that require file review or memo writing probably take up half of this time.

The labor for negative fruit that machines can take over is thus on the order of 7,500 man/hours a day, or the full time of around 1,000 people who cost the Government some \$10,000,000 annually in salaries and overhead. The aggregate computer budget should remain below this figure. It should then be worth doing in the name of economy, as well as for the sake of long-term quality and service gains.

A Stitch in Time

We have listed neither all the benefits nor all the costs of such a system. Among the latter the conversion of existing indexes to machine language is prominent, a job so arduous that it will have to be spread over a long period of time.

We in CIA, as we have said, began typing our index cards with a machine language by-product in the fall of 1957. By early 1964, when our index computers should begin to operate, we will probably have half—the recent, most useful half—of our index entries in machine language. Then begins the drive on the rest.

What if we had not begun in 1957? We would be overawed by the conversion problem, instead of merely impressed and annoyed. And the prospect would appear less pleasant every day. Optimists might point to the development of mechanical print-reading techniques; we have little faith in the possibility of applying these to a collection of heterogeneous 3x5 index cards. Every index or reference card now produced on an ordinary typewriter by a USIB agency which later decides to use a computer—whether in the proposed network or by itself—will probably have to be retyped. To make a beginning, therefore, index and reference typists need to be re-equipped with keypunches or tape-producing typewriters.

Those members of the intelligence community that have taken this step will be in a position to link their biographic indexes in a network. Consider the trends: Information vol-

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umes are going up, the number of trace requests is increasing. Clerical manpower needs and labor costs are going up correspondingly. On the other hand, computer flexibility is improving, and computer costs—per unit of work done and information stored—are coming down. And as we read current history, we see no visible trend toward a lessening of pressure on the security of the United States here and abroad which might reduce the Government's need to use its intelligence and counterintelligence tools as effectively as possible.

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The defense hardware portion of statistics on industrial production, national income, and budgeted expenditures.

A NEW SOURCE FOR FIGURES ON SOVIET MILITARY OUTPUT

J. F. Freeman

One of the characteristics of the Soviet system of economic statistics is that it is designed to embrace, and in practice must embrace, all industrial activity that takes place in the USSR. This being the case, it has long been considered that the Soviet statistical aggregates "national income" and "gross output of industry" must include somewhere in their totals the amounts for such concealed activities as the production of military and space equipment. On this premise efforts have been directed for some years toward getting the best possible understanding of the two aggregates and their statistical subconcepts and trying to identify where within both sets of them the production of military and space equipment might be included. Although the detailed findings of this work are not yet firm enough to be used in official estimates, the operation has proved exceedingly interesting and now appears sufficiently definitive to warrant an interim methodological report.

Study of Output and Income through 1959

A supposition that the production of hardware for defense and other secret programs was being handled in output statistics as "machine building" was suggested early by the fact that in 1953 the atomic energy program was put under the Ministry of Medium Machine Building.¹ This supposition was confirmed in mid-1959, when it became possible to demonstrate that the Soviet statistic for the "gross output of machine building" was large enough that the total production of civilian machinery might well account for only about half

¹ Kramish, Arnold. *Atomic Energy in the Soviet Union*, Stanford, 1959, pp. 176-178. Unclassified.

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of it.² Since this machine output is one component of the "gross output of industry" aggregate, the first step was to try to get the best possible figures for the latter, year by year, in absolute ruble values.

The difficulty in establishing such a series lay in the fact that the Soviets had always carefully avoided giving any absolute ruble values for their major statistical categories. The annual values of the gross industrial output had therefore to be built up step by step from casual references to the ruble values of various subordinate elements of the system. Once a value for any single year had been established in absolute terms, however, it would be possible, using the statistical data published by the Soviets in terms of percentage relationships, to expand this with a fair degree of assurance for the years after 1950 into a full annual series. By the end of 1959 such a series was in fact achieved, probably accurate within two percent, in both constant and current ruble prices.³

The end of the year 1959 marked also the first findings in the other approach to the problem, that through national income figures. In an article in the October 1959 issue of *Soviet Studies*, A. Nove and A. Zauberman called attention to the fact that one of the subconcepts of national income, the "increment to state reserves," was carrying a figure of an order of magnitude—5 to 6 percent of the total national income and hence 47 to 57 billion old rubles for the year 1955 and 56 to 67 billion old rubles for 1957—for which there could be "only one possible explanation: this figure must include 'military accumulation,' i.e., a figure representing armaments."⁴

That these state reserves include "reserves of means of defense" was already known from the Soviet literature. For ex-

² C.I.A. working papers: *Value of Soviet Machinery and Military End Item Output 1950-1958, with projections to 1965*, by W. T. Lee, July 1959; and *Gross Production of the Branches of Soviet Industry*, by Clopper Almon, August 1959. Secret.

³ C.I.A. CSM No. 66/59, *Establishment of an Absolute Ruble Value for the Soviet Concept, "Gross Industrial Output."* Confidential.

⁴ Nove, A. and Zauberman, A. "A Soviet Disclosure of Ruble National Income," *Soviet Studies*, October 1959, p. 198. Unclassified.

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ample, a Soviet text on the national accounts defines them as follows:

The fund of [state] reserves combines, first, state material reserves having a long-term character; secondly, reserves of means of defense having a special character;⁵ and thirdly, operational reserves of the Council of Ministers, to be made use of, in the course of carrying out the annual plan, for satisfying newly arising current requirements.⁶

Since the first and third constituents of the reserves here named would not in these years have exceeded 6 to 10 billion old rubles, the figures of Nove and Zauberman would mean, averaging the highs and lows, that increments to "reserves of means of defense," representing new military material and equipment, were of the order of 46 billion old rubles for 1955, 54 billion old rubles for 1957, and say 58 billion old rubles for 1958.

From All Industrial Output to Machine Building Only

A variety of data that became available at the end of 1960 and in early 1961 made it possible to strengthen the basis of the series for the value of the gross output of industry. For example, detailed figures for profits earned in state industry published for the first time in the 1959 statistical handbook,⁷ when combined with published statements of *rates of profit* in state industry, gave directly a set of absolute ruble values for state industry output, a major constituent element of the gross output of all industry. Remarkably precise confirmation of these figures was offered by a statement in the budget speech for 1961 to the effect that a reduction in 1961 indus-

⁵ Although the phrase "having a special character" might be read as restricting this category to certain special means of defense, the magnitude of the sums it covers makes it more probably modify "reserves" in parallel with the "long-term" and "current operational" of the other two categories. The second category should then cover the entire stock of defense hardware.

⁶ Bor, M. Z. *Balans Narodnogo Khozyaystva SSSR (The balance of the national economy of the USSR)*, Moscow, 1956, p. 97. Unclassified.

⁷ USSR, Tsentral'noye statisticheskoye upravleniye. *Narodnoye khozyaystvo SSSR v 1959 godu (The National Economy of the USSR in 1959)*, Moscow, 1960, p. 799. Unclassified.

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trial costs by one percent over 1960 would provide savings of 1.370 billions of new (13.70 billion old) rubles.⁸ The four significant digits of this figure enabled us to establish that our calculations for the output of state industry were correct within a fraction of one percent.

In attempting to derive from the gross industrial output series a value for the gross output of machine building alone, our early methodology was to work through the special Soviet concept "instruments of labor" (*orudiya truda*), since the relationship of that concept to the gross output of industry was given in the handbooks. In February 1961, however, this effort was short-circuited when a Soviet textbook on the technology of machine building presented us with a figure of 255 billion rubles explicitly stated to be the value in 1955 rubles of "machine building and metal working" for 1958.⁹ "Machine building and metal working" differs from "machine building" only by the addition of two minor elements, "metal working" and "repair." Furthermore, to help break any figure for the aggregate into its three constituent elements, we already had from an earlier handbook the rates of growth between 1950 and 1955 for the three elements and for the total.¹⁰

The Repair Problem

The only trouble with this windfall was that the 255 billion figure did not fit. It could not be reconciled with the data we already had on the value of repair and of machine building. This impasse was resolved, however, by Soviet publication in the spring of 1961 of a book on the efficiency of labor¹¹ which gave detailed tables showing the distribution of repair labor in industry in 1958. From a study of these tables came the hypothesis that after 1955 the repair category in

⁸ *Pravda*, 20 Dec. 1960, p. 4. Unclassified.

⁹ Gavrillov, A. N. *Sovremennoye sostoyaniye i napravleniya razvitiya tekhnologii mashinostroeniya i priborostroeniya* (Present state and direction of development of the technology of machine and instrument building), Moscow, 1960, p. 304. Unclassified.

¹⁰ USSR, Tsentral'noye statisticheskoye upravleniye. *Promyshlennost' SSSR* (Industry USSR), Moscow, 1957, p. 203. Unclassified.

¹¹ Kheynman, S. A. *Organizatsiya proizvodstva i proizvoditel'nost' truda v promyshlennosti SSSR* (Organization of production and the productivity of labor in USSR industry), Moscow, 1961, p. 61. Unclassified.

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"machine building and metal working" ceased to cover repair work in general and reported only that done in special "repair enterprises." There is no direct evidence that this is what happened, but such a change would be consistent with the new general rule in effect by 1957 that all statistics should henceforth be furnished on an enterprise basis. Before 1955 the "repair enterprises" comprised only those doing work for industry and construction, but, as revealed for the first time in a 1960 textbook on statistics,¹² they came then or sometime thereafter to include those doing the repair of railway rolling stock and of communications equipment. In all this context, the concept of repair includes the manufacture of replacement spare parts.

Using the new tables showing the distribution of repair labor, together with such other data as we have on the amount of repair,¹³ it has been possible to calculate for 1958 a figure of 17 billion rubles as the value of work done in the repair enterprises and hence as the amount of repair contained in the 255 billion aggregate for "machine building and metal working." As the amount of the other extraneous element in this statistic, "metal working," can be estimated from a statement of its weight in the whole¹⁴ to be approximately 31 billion rubles, there is left 207 billion rubles as the value of "machine building" alone. These figures for the three elements, so arrived at, are consistent with the available data on growth rates, which at the year 1958 we have for the "machine build-

¹² Savenskiy, D. V. *Kurs promyshlennoy statistiki* (Course of industrial statistics), Moscow, 1960, p. 467. Unclassified.

¹³ Bunich, P. "Problemy kapital'nogo remonta osnovnykh fondov v promyshlennosti" (The problem of the capital repair of fixed capital in industry), *Planirovaniye i finansirovaniye kapital'nogo remonta osnovnykh fondov* (The planning and financing of the capital repair of fixed capital), Moscow, Gosfinizdat, 1958, pp. 5, 31. Unclassified.

¹⁴ "Amortizatsiya i voprosy finansirovaniya remonta i modernizatsii osnovnykh fondov" (Amortization and the question of the financing of the repair and modernization of fixed capital), *Voprosy Ekonomiki* (Questions of economics), no. 4, 1959, p. 106. Unclassified.

Gudok, 23 January 1959, p. 1. Unclassified.

¹⁵ Smirnov, G. and Yasnovskiy, N. "Perspektivy sorevnovaniya SSSR i SShA v oblasti mashinostroeniya" (Prospects for the rivalry of the USSR and the USA in the field of machine building), *Planirovoye khozyaystvo* (Planned economy), No. 8, 1960, p. 87. Unclassified.

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ing" element and for the total "machine building and metal working."

The 1955 value of "machine building and metal working" was derived by carrying back the 1958 figure of 255 billion in accordance with the published rate of growth for the aggregate. The resultant figure, 174 billion old rubles, was later quite closely confirmed by Khrushchev's statement on 17 October 1961 that the output of machine building and metal working in 1955 was 17 billion new (170 billion old) rubles.¹⁵ When the "metal working" and "repair" elements are calculated respectively at 22.7 and 11.3 billion old rubles in 1955, machine building for that year is left at 140 billion rubles. If the repair figure is adjusted to the old practice by adding 12.5 billion rubles for sundry repair outside of the "repair enterprises" (5.3 billions for machine tractor stations, 4.2 for trucks and cars, and 3.0 for other), the values of the three elements and their adjusted total are completely consistent with the old 1950-1955 growth rates published for them. Thus all of the data now seem to fit, and our hypothesis about repair appears vindicated.

From Machine Building to Defense Hardware

With a series for the gross output of machine building so established, the rest of the way is reasonably straightforward. "Gross output" reflects, not completed production, but costs put into machine building, including those put into any increased amounts of work still in process at the end of the year. With a regularly rising rate of production, increases in the amount of work in process are to be expected, and these have to be estimated in order to convert gross output into what is known as "commercial output."

Furthermore, gross output adds together the output of all machine building enterprises, despite the fact that products of some enterprises enter as input into the production of others and thus are counted twice. This fact, however, has also bothered the Russians, and they therefore keep a special account for the value of such items (*pol'fabrikaty*) figured into the "gross output of machine building."¹⁶ Two chance ref-

¹⁵ *Pravda*, 18 October 1961, p. 5. Unclassified.

¹⁶ Goloshchapov, V. A. *Spravochnik po bukhgalterskomu uchetu* (Reference book for accounting), Moscow, 1961, p. 359. Unclassified.

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erences to this statistic, consistent with each other, inform us that in 1955 it represented 30 percent of material purchases,¹⁷ which were themselves 59 percent of costs,¹⁸ which were 90.5 percent of value,¹⁹ and that in 1958 it accounted for 17 percent of the value of gross output.²⁰

With these two adjustments one can derive from the gross output series one for the value of the final output of machine building. Roughly, in 1955 rubles, the figures are 112 billion for 1955 and 163 billion for 1958. These include the output of consumer durables. They also include each machine building plant's own repair work and any contract repair or manufacture of replacement parts it did for anyone outside the machine building industry. From the data on repair labor a maximum figure of 10 billion rubles can be calculated for this repair work in 1958. A corresponding figure for 1955 would be 6 billion. The subtraction of these would leave 106 and 153 billion rubles for new machines in 1955 and 1958 respectively.

More work on this series, as well as on these adjustments, will have to be done. But when the value of consumer durables is excluded from the figures so far reached and they are adjusted for exports and imports, they leave a net output of "capital" equipment approximating 100 billion rubles in 1955 and 144 billion rubles in 1958. Since we know how much of these amounts were put back into the civilian economy as "capital investment"—about 50 billion rubles in 1955 and 82 billion in 1958—we have left to cover the value of military and other secret equipment produced—over and above repair work, the manufacture of replacement parts, and probably the output of conventional ammunition—something like 50 billion rubles in 1955 and 62 billion in 1958.

¹⁷ Zverev, A. et al. *Finansy i sotsialisticheskoye stroitel'stvo* (Finance and socialist construction), Moscow, 1957, p. 124. Unclassified.

¹⁸ USSR, Tsentral'noye statisticheskoye upravleniye. *Narodnoye khozyaystvo SSSR v 1956 godu* (The National Economy of the USSR in 1956), p. 100. Unclassified.

¹⁹ Zverev, A. "Gosudarstvennyy byudzh et vtorogo goda shestoy pyatiletki" (The state budget in the second year of the Sixth Five Year Plan), *Planovoye khozyaystvo* (Planned economy), No. 3, 1957, p. 18. Unclassified.

²⁰ Demchenko, M. N. and Slastenkov, Ye. N. *Spetsializatsiya i kooperirovaniye—reservy rosta proizvodstva* (Specialization and cooperation—reserve for the increase of production), Moscow, 1961, p. 67. Unclassified.

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Output-Income-Budget Correlation

The Nove-Zauberman calculations from national income figures, which upon adjustment as outlined above gave values for military accumulation of 46 billion rubles in 1955 and 58 billion in 1958, are closely comparable to these results of 50 and 62 billion, respectively, arrived at from estimated production figures. The correlation supports the view that military production of a "capital" nature is accounted for as an increment to "reserves of means of defense" and a corollary thesis that such production is charged to the budget not as a current expenditure but as an "accumulation."

There is no problem in finding places in the Soviet budget outside the explicit defense allocation where sums of these magnitudes could be charged. The several unassigned residuals in the budget, taken together, are quite sufficient to cover them. For example, the residual in the category "Financing the National Economy—Industry and Construction" in 1958 was calculated at 30 billion old rubles, and in the same year the planned residual for Financing the National Economy and for the budget as a whole totalled between them more than 48 billion.²¹

²¹ C.I.A./RR ER 61-28, *The Soviet Budget for 1961*, pp. 27/28. Unclassified.

A procedure for estimating the quantity of a particular kind of airframe produced at a particular Soviet plant.

PRODUCTION AT AN AIRCRAFT PLANT

Randolph Payne

The standard data required for estimating numbers of aircraft produced by a Soviet plant are the model of the plane and the approximate weight of its airframe, the floor area of the plant and the number of shifts it works, and the approximate date when production of this model began. A simple calculation from these data rests upon average figures that have been empirically derived for bombers, fighters, and transports respectively expressing pounds of production as a function of plant floor space: one need only multiply the floor area by this factor, adjust for number of shifts worked, divide by the weight of one airframe plus spare parts, and multiply by the number of months since production began to get the total number of units produced.

This method, however, is a comparatively crude one, in that it rolls into a single average some variables of considerable range—man-hours required per pound of production, worker density on the production line, and man-hours worked per month. In particular, it disregards the important increase in rate of production that is always achieved as a plant gains experience in building a new model. The graphic representation of this phenomenon is called the learning curve. It is the most important, versatile, and widely used of the many statistical tools employed by the U.S. aircraft industry in forecasting, planning, and evaluating the production of airframes.

The Learning Curve

The formula for the learning curve expresses mathematically a persistent and well-defined relationship between the hours of labor expended directly on airframe building and the number of airframes produced. With each doubling of the cumulative number of airframes built, the man-hours required per pound of airframe suffer a percentage decrease

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that is constant for any particular model. If the man-hour requirements decrease by 20 percent when twice as many airframes have been built, the rate of learning is reflected in what is called an 80-percent learning curve, because the direct labor required to produce the second frame is only 80 percent of that required for the first, that for the fourth only 80 percent of that for the second, that for the 400th only 80 percent of that for the 200th, and so forth. A relationship of this type, featuring successive powers of 2, has the convenient property of appearing as a straight line when graphed on logarithmic scales. Graphed arithmetically it appears as a curve of constantly changing slope as in Figure 1.

This form of the learning curve, which shows the man-hours required to produce any one of the series of airframes, is called a unit curve. There can also be constructed a cumulative

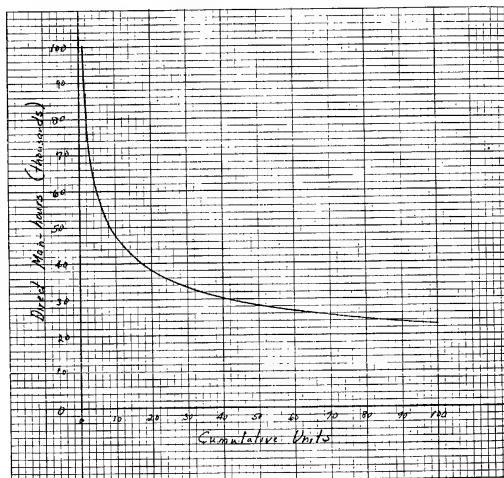


FIGURE 1. The 80-percent Learning Curve Plotted Arithmetically.

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lative total curve to show the cumulative total of man-hours required for all airframes up through any given number in the series. Both are illustrated in logarithmic representation in Figure 2.¹

The learning curve can be applied in estimating the production of a Soviet airframe plant with the assistance of four other standard curves also derived from the World War II and postwar experience of the U.S. airframe industry. These represent:

Man-hours per pound of airframe required for production of the initial unit as a function of airframe weight (Figure 3).

Floor area devoted directly to production as a function of total covered floor area (Figure 4).

Square footage per direct worker on the largest shift as a function of airframe weight (Figure 5).

Flow span (number of working days and cumulative man-hours expended from start of fabrication to initial flight) for the initial unit of production (Figure 6).

Crate and Coot

The refined methodology based on these curves is in general a matter of calculating the man-hours expended per month against the man-hours required for the initial unit of production and then, by application of the learning curve, for subsequent units. It can be illustrated by an account of how

¹The equation of the unit learning curve is $Y=aX^n$

where

Y=direct man-hours required to produce airframe unit number X,

a=direct man-hours required to produce unit number 1,

X=any number of units produced, and

n=the slope (tangent) of the learning curve (log of the percent of the learning curve, expressed as a decimal, divided by log 2).

The cumulative total curve is closely approximated by the definite integral from the first unit minus one-half to the last unit plus one-half. The integration gives the equation

$$y = \frac{a}{1+n} \left[(X + \frac{1}{2})^{1+n} + (\frac{1}{2})^{1+n} \right]$$

where y=total direct man-hours required to produce all units through unit X, the other symbols remaining as above.

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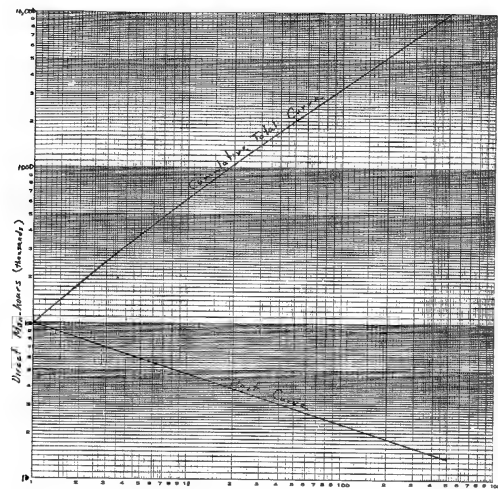


FIGURE 2. Cumulative and Unit 80-percent Learning Curves in Logarithmic Graph

it was used to estimate the production of the Soviet transport planes Il-14 (Crate) and Il-18 (Coot) at Moscow Airframe Plant No. 30. This estimate is a complex example in that it covered the phasing of the Crate aircraft out of production and the phasing of the new and much larger Coot in. In March 1959, when the estimate was made, the following information pertaining to the problem was available.

The total covered floor at Plant No. 30 was about 1.6 million square feet.

The plant was working two shifts per day.

The Crate airframe weighs about 16,000 pounds.

The first series-produced Crate was probably completed in December 1955.

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In June 1956, according to the report of a visiting foreign delegation, the plant was tooling for series production of the Coot aircraft, and a prototype of the Coot was being tested.

In March 1957 Crate aircraft continued to be assembled while work on the Coot was in progress, it was reported by other foreign visitors.

In April 1957 the new Coot prototype was seen by foreign aircraft engineers.

The Coot was displayed publicly for the first time on 8 July 1957.

The Coot airframe weighs approximately 43,000 pounds.

The first series-produced Coot was probably completed in either August or September 1957; on 21 September, according to Tass, it successfully completed a test flight. A conservative estimate sets the start of series production at 1 September 1957.

That average parameters of production might be on the low side when applied to Plant No. 30 was indicated by the fact that it had received many awards for production and about 1,500 people had worked there for more than 20 years. On the other hand, negative allowances would have to be made for handicaps to production of the large Coot imposed by constrictions in Plant No. 30's final assembly building. About 955 feet long, 155 wide, and 40 high, this building was known to be interrupted by rows of columns, one of them running lengthwise through the middle of the building. The doors were only wide enough to accommodate the 104-foot wing span of the Crate; the Coot had a wing span of 124 feet. A foreign delegation visiting the plant in 1958 reported that several chords and other portions of the roof trusses had been cut out to allow the tail fins to protrude above the soffit of the lower members. Openings had also been cut into one outside wall, with lean-to's built around them, to accommodate one of the wings, the other being allowed to protrude through the row of columns that ran down the middle of the bay. The Coot fuselage was thus rendered immobile until the aircraft had been assembled completely, and then the outboard portions of the wings and the vertical tail assembly had to be removed in order to get it outside.

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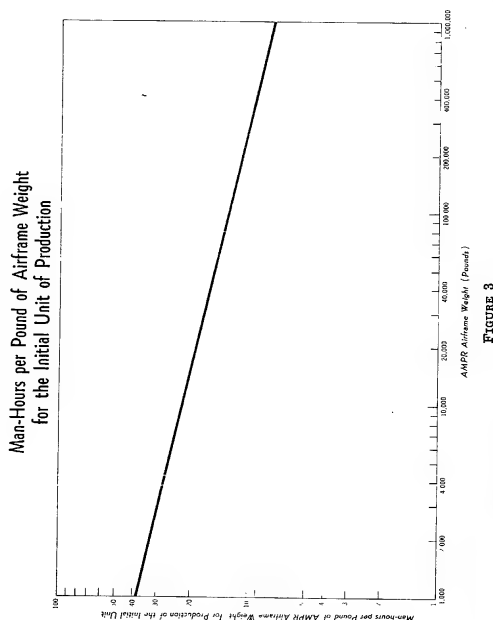
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Crate Production

The application of the established parameter for man-hours required per pound of production according to total airframe weight (see Figure 3) gave an estimate that the first Crate airframe could have been produced for 20 man-hours per pound. But Plant No. 30 was here following in the footsteps of Tashkent Airframe Plant No. 84, the first to produce the Crate, and U.S. data indicate that the second builder of the same aircraft requires for his initial unit of production only



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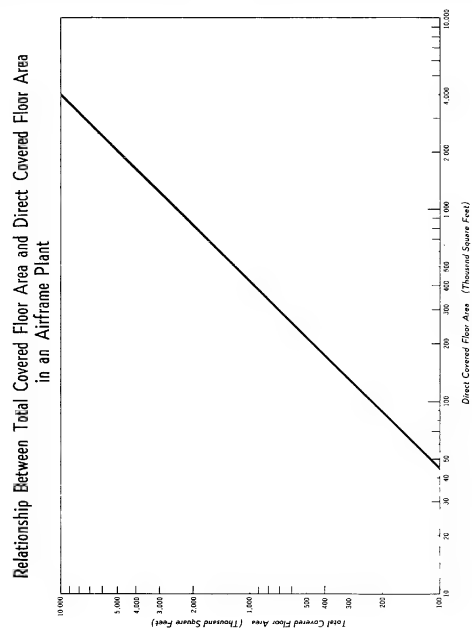
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90 percent of the man-hours needed by the first. Thus Plant No. 30 was estimated to have produced its initial airframe at 18 man-hours per pound, a total of 288,000 man-hours for the 16,000-pound Crate. It remained to estimate the monthly rate at which these man-hours were expended.

The relationship between total covered floor area and that devoted directly to production (see Figure 4), applied to the 1.6 million square feet of Plant No. 30, gave a productive floor area of 650,000 square feet. The relationship between square

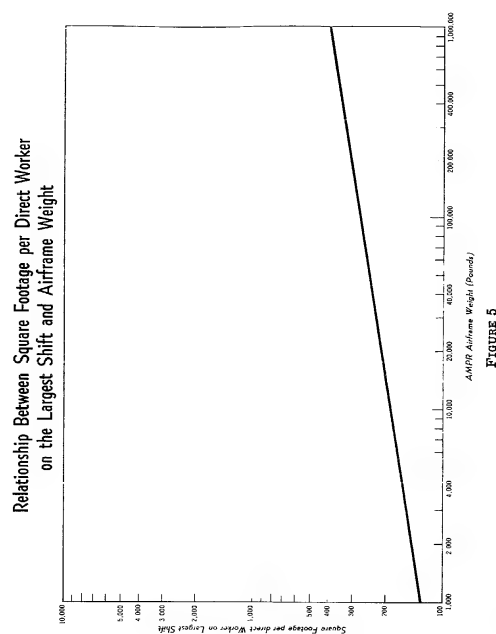


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footage per direct worker and airframe weight (see Figure 5) showed for the Crate a requirement of 200 square feet per worker on the largest shift, which could thus use 3,250 workers in the 650,000 square feet. On the assumption that the second shift was 65 percent as large as the first, the total number of direct workers was estimated to be 5,360.

These workers were each assumed to work 8 hours five days per week and 6 hours on Saturday. Allowing 6 annual holidays, there would be 255 8-hour and 52 6-hour days, or a total

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of 2,352 hours, per year. A man's average working time in one month would then be 196 hours, which, however, was reduced by an 8-percent factor for direct workers doing indirect work, on sick leave, on vacation, and on rest periods, to yield 180 hours per month per worker. Multiplication by the 5,360 men gave 965,000 man-hours per month expended on the Crate. Allowing a 3.5-percent effort devoted to the production of spare parts, the man-hours per month remaining for unit airframe production figured about 932,000.

Dividing into this monthly expenditure the 288,000 man-hours calculated above to have been required for the initial unit gave a ratio of effort expended to effort required expressed in percentage as 323.6. That is, the initial unit was produced in December, 1955, at the rate of about $3\frac{1}{4}$ units per month, and the rate for succeeding units would increase according to the learning curve. The average learning curve for transport aircraft in the U.S. aircraft industry is 74.5 percent, but in estimating Plant No. 30's production of the Crate a 72.5 percent curve was used because of the many experienced workers at the plant and because of its past production record.

A schedule of Crate production could now have been compiled by accumulating the monthly expenditure of 323.6 percent of first-unit requirements and converting this into units of production in accordance with the 72.5 percent learning curve. But by 1956 production of the Coot had also been begun, and the full manpower in the plant was not being used on the Crate. An estimate had first to be made of the manpower requirements for production of the Coot in order to get a figure for the remaining manpower available for work on the Crate.

Coot Production

The initial unit of series production for the 43,000-pound Coot airframe would, according to the curve of Figure 3, have required 16 man-hours per pound, a total of about 688,000 man-hours. This figure was first used to determine when work on the Coot began through the correlation between man-hours required for initial unit production and working days from start of fabrication to initial flight shown in Figure 6.

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Flow Span for Manufacture of an Aircraft from the Start of Fabrication to the Initial Flight, for the Initial Unit of Production

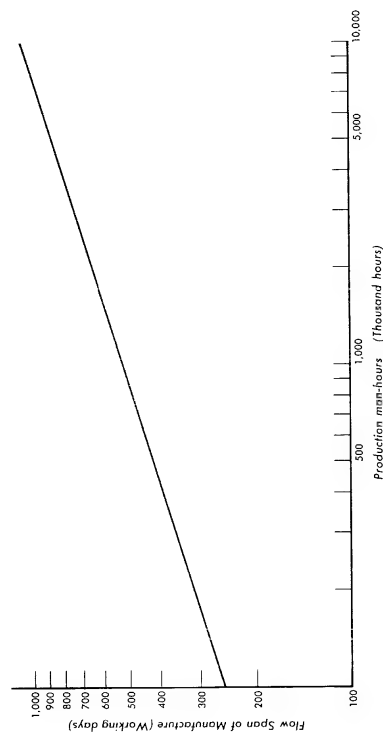


FIGURE 6

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The 688,000 man-hours expended on the first series-produced Coot aircraft would, on the basis of experience in the U.S. aircraft industry, mean that 460 working days were required. Using a working day of 7.7 hours to allow for the short Saturday and the 196 hours per month calculated above for Crate production, the total elapsed time for the first Coot was found to be 18 months; but it was decided to increase this to 19 months because of the handicaps under which the Coot was being produced. This estimate, since it was established in our data that the first unit was completed in September 1957, put the start of fabrication sometime in February 1956.

Production of the Coot would have utilized about 240 square feet per worker on the largest shift, according to the worker density curve of Figure 5. With the productive floor area, 650,000 square feet, previously calculated for Plant No. 30 and again assuming the second shift to be at 65 percent the strength of the first, the total number of direct workers was estimated to be

$$\frac{650,000}{240} \times 1.65 = 4,570.$$

This figure was rounded off to 4,500 direct workers and multiplied as before by 180 hours per month to give 810,000 man-hours for the monthly expenditure of effort. The allowance of 3.5 percent for production of spare parts left about 782,000 productive man-hours per month expended on Coot airframe units.

The monthly expenditure of man-hours as a percentage of man-hours required for the initial unit then equaled

$$\frac{782,000 \times 100}{688,000} = 113.7,$$

giving a rate of production for the first unit of 1.137 units per month.

The average learning curve of 74.5 percent, which had been sharpened for the Crate, was slacked off to 76 percent in estimating Coot production to compensate for the handicaps under which the aircraft was being assembled. Using this curve to convert accumulated monthly expenditures of 113.7 percent of first-unit man-hours into units produced, the schedule of production shown in Table I was compiled.

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Table I
Schedule of Production of Coot Aircraft
at Moscow Airframe Plant No. 30
September 1957-March 1959

Year and Month	Cumulative Percent- age	Cumulative Produc- tion	Monthly Produc- tion	Smoothed Monthly Produc- tion	Smoothed Cumulative Produc- tion
1957					
September	113.7	1	1	1	1
October	227.4	2	1	1	2
November	341.1	4	2	2	4
December	454.8	7	3	2	6
1958					
January	568.5	9	2	3	9
February	682.2	12	3	3	12
March	795.9	16	4	3	15
April	909.6	19	3	4	19
May	1,023.3	23	4	4	23
June	1,137.0	27	4	4	27
July	1,250.7	32	5	4	31
August	1,364.4	36	4	5	36
September	1,478.1	41	5	5	41
October	1,591.8	46	5	5	46
November	1,705.5	52	6	5	51
December	1,819.2	57	5	6	57
1959					
January	1,932.9	63	6	6	63
February	2,046.6	69	6	6	69
March	2,160.3	75	6	6	75

The Phasing Out

The device used to determine the number of man-hours that were devoted each month beginning with February 1956 to the Coot and therefore the number of workers out of the 5,360 total remaining available for Crate production was the Coot work-in-process curve shown in Figure 7. Here the expended cumulative percentages of first-unit man-hours represented by deliveries were plotted by month from September 1957, delivery date of the first completed unit. These form the straight curve "Completion of Production." Then each unit of production was plotted horizontally to the left at a distance representing the lapsed time from start of fabrication to completion, 19 months for the first unit and reduced by a learning curve for succeeding units. These form the "Loading Line." Perpendiculars were drawn to this curve from the

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USSR: Work-in-Process Curve for Coot (II-8) Transport Aircraft

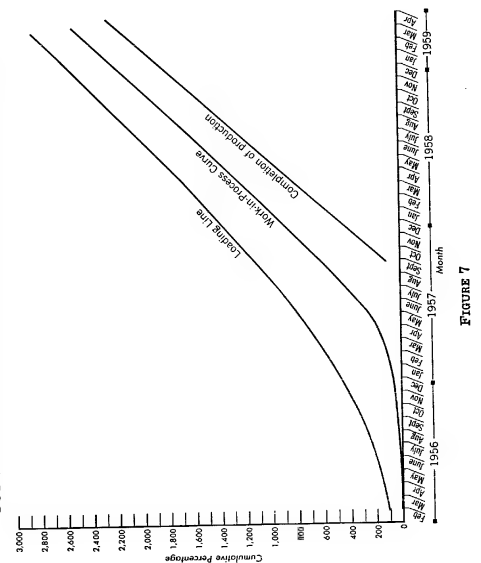


FIGURE 7

Completion of Production line, and a third curve was drawn through the mid-points of the perpendiculars and arbitrarily faired from the origin to the first perpendicular. This is the work-in-process curve.

This curve determined by month the cumulative percentage of first-unit man-hours devoted to Coot production, and the difference between successive percentages was the percentage expended each month. The latter were multiplied by the number of man-months required for the initial unit (688,000 over 180) to give the number of workers absorbed each month by the Coot. These were then subtracted each month beginning with February 1956 from 5,360 to yield the manpower base left for Crate production. The results of the calculation are listed in Table II.

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Table II
Production of Crate Aircraft at Moscow Airframe Plant No. 30 as Affected by Phasing In of Coot
December 1955-June 1958

Year and Month	Cumulative Process Coot	Smoothed Monthly Percent- age for Coot	Direct Workers for Coot Production		Direct Workers Remaining for Crate Production		Percent- age of First Unit Man-Hours Expended Monthly	Cumulative Production of Crate Units
			Complete Units	Spare Parts	Complete Units	Spare Parts		
1955								
December	...	...	...	...	5,360	5,179	323.6	4
1956								
January	...	...	...	...	5,360	5,179	323.6	14
February	...	...	...	...	5,360	5,179	323.6	27
March	...	...	38	79	5,321	5,141	321.2	43
April	...	...	76	119	5,241	5,064	316.4	64
May	...	...	115	198	5,162	4,987	311.6	87
June	...	...	154	237	5,123	4,950	309.3	114
July	...	...	193	299	5,043	4,872	304.4	143
August	...	...	232	368	5,004	4,835	302.1	175
September	...	...	271	444	4,885	4,720	295.0	210
October	...	...	310	520	4,806	4,643	290.1	246
November	...	...	349	599	4,727	4,567	285.4	286
December	...	...	388	673	...	...	...	326
1957								
January	92	20	764	791	4,569	4,414	275.8	368
February	118	24	917	949	4,411	4,262	266.3	410
March	148	30	1,147	1,187	4,173	4,032	251.9	452
April	188	39	1,491	1,543	3,817	3,688	230.4	493
May	240	53	2,028	2,097	3,283	3,153	197.0	528
June	322	79	3,019	3,125	2,235	2,159	134.9	562
July	418	91	3,478	3,600	1,760	1,700	106.2	572
August	510	96	3,669	3,787	1,563	1,510	94.3	590
September	612	100	3,822	3,956	1,404	1,357	84.8	607
October	713	101	3,860	3,985	1,365	1,319	82.4	624
November	815	102	3,898	4,034	1,326	1,281	80.9	639
December	918	103	3,937	4,075	1,285	1,242	77.5	654
1958								
January	1,022	104	3,975	4,114	1,246	1,204	75.2	669
February	1,121	104	3,975	4,114	1,246	1,204	75.2	686
March	1,223	105	4,013	4,153	1,207	1,166	72.8	701
April	1,330	105	4,013	4,153	1,207	1,166	72.8	717
May	1,436	105	4,013	4,153	1,207	1,166	72.8	732
June	1,543	106	4,051	4,193	1,167	1,128	70.5	746

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Aircraft Production

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Validation

Information received since these estimates were made indicates that at least 736 C-47 aircraft were produced at Plant No. 30. This figure compares well with the total of 746 in Table II. The estimate of C-47 production, however, was less accurate; it was learned later that the second work shift at the plant was probably discontinued in 1958. Production therefore reached a rate of 4 C-47s per month, not in April 1958 as estimated, but only in October. As of 1 October 1958 the total produced is believed to have been 33 instead of the 41 given in Table I, and production remained constant at the rate of 4 per month through 1960.

These results show that successful application of a methodology is dependent on how well the seasoned judgment of the analyst can cope with the imponderables and on the accuracy of the intelligence information used in the calculations. Calculations under any methodology, although useful in the absence of more direct information, never preclude the need for concrete and reliable intelligence on the production of Soviet aircraft.

Use and misuse of an old, felicitous device for the communication of intelligence.

THE MAP IN FIELD REPORTING

Louis Thomas

Maps have long been essential tools in intelligence reporting because, in locating features of intelligence interest with respect to one another and with respect to geographic coordinates or other reference systems, they do a basic job that cannot be done as quickly or as satisfactorily by verbal description. Not infrequently a map constitutes the heart of a field report, conveying the whole message with little need for support in the accompanying text. More commonly, however, the text tells *What* and the map tells *Where*. Maps accompanying reports also serve to some extent as graphic abstracts to help end users confronted with a multitude of source documents decide quickly whether a given report offers anything pertinent to a problem at hand. In this role the map often has much to do with determining whether the detailed textual body of the report is read and used. Clear maps invite follow-up reading; cryptic or confusing ones discourage it.

With some risk of oversimplification it can be said that the maps commonly used in reporting intelligence data from the field are of three basic types: (1) pre-existing printed maps or charts on which the newly acquired intelligence data are plotted, (2) field-prepared sketch maps based in part (especially as regards background information) on pre-existing maps or charts, and (3) sketch maps based solely on field observation, no data of any kind being taken from pre-existing maps. All three of these types of map have been and are being used, successfully and otherwise, as integral parts of field reports. Which one is most suitable for a given purpose depends, *inter alia*, on the nature and importance of the data being reported, the map and intelligence know-how of the reporting officer, what maps and other facilities are available to him, and the anticipated end use of the reported data.

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The Map

Advantages and Hazards

The first type, data plottings on a pre-existing printed map, since it generally gives good orientation in relation to known features, facilitates rapid interpretation by those who receive and exploit the report. It is particularly suitable for areas of continuing intelligence interest, those often reported on. An obstacle to its use is that expendable copies of suitable up-to-date maps, or facilities for reproducing them, are not always available where the reports are assembled. An example of this type is shown in Figure 1, a hydrographic chart on which circled letters referring to the body of the report are used to identify features reported on. If a brief legend naming the features designated by these letters had been superimposed on the face of the chart its value as a reporting tool would have been enhanced.

The second type, the sketch based in part on one or more pre-existing maps, is the one most commonly used in field reports. It has many advantages and disadvantages. Important among the former are the freedom it gives to select and adapt features of existing maps, the fairly good orientation it generally provides in relation to known features, and the ease with which it can be interpreted if it is well compiled. One disadvantage is that maps of this type can give false confirmation of information from other sources unless they sharply distinguish the data taken from pre-existing maps from the data being reported as current observation. Another is that this method invites preparation of cryptic, incomplete maps. Reporting officers sometimes assume that the base maps to which they orient their observational data will be readily available at all places where their reports are exploited. They then limit their sketches to the bare outlines of features on which they are presenting new information. This causes much waste and gnashing of teeth in offices where the reports could and should be used but can't because the large-scale maps needed to interpret them are not available. Figures 2 and 3 are good and bad examples, respectively, of this type of report map.

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The Map

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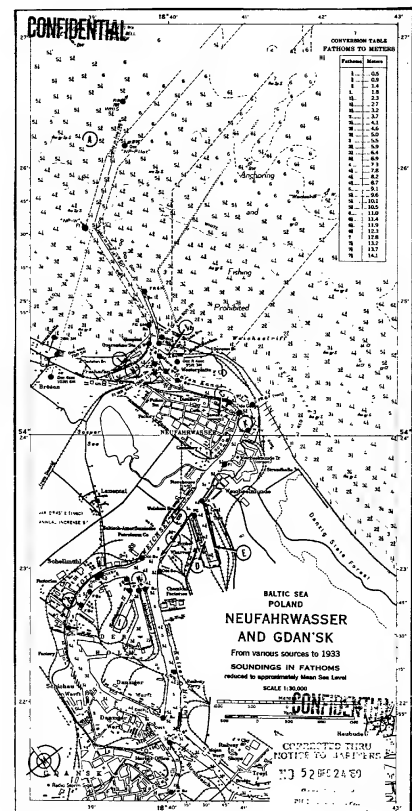


FIGURE 1

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The Map

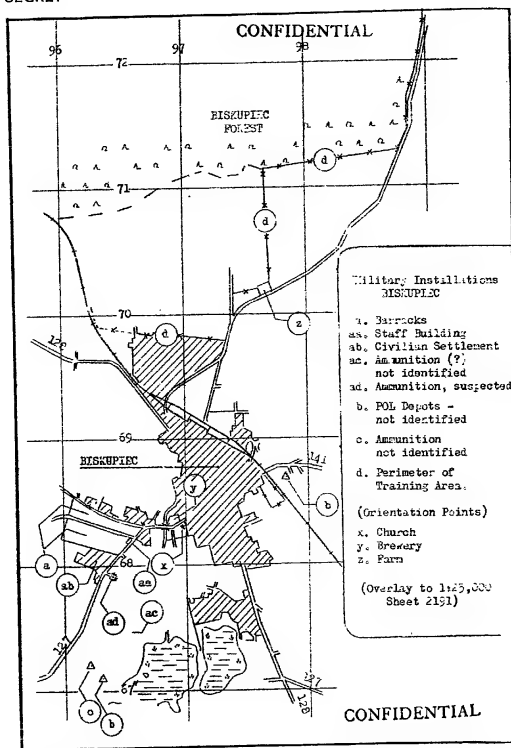


FIGURE 2. Example of an exceptionally good compiled report map comprising observational data plotted on a background of selected information from an identified 1:25,000 topographic map. Note legend giving brief identifications of features discussed in some detail in the body of the report. The map has the precision required for military plotting, yet conveys on its face a message that all readers can grasp without recourse to military grid systems or large-scale topographic maps.

The Map

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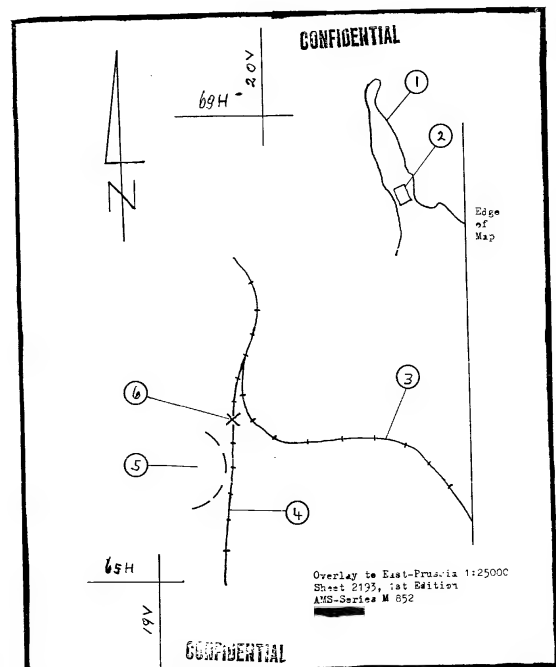


FIGURE 3. Example of an inadequate compiled report "map." Not even a brief version of the message is conveyed on the face. Full interpretation requires the cited 1:25,000 topographic sheet. Compare with FIGURE 2.

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The Map

The third type of map, the sketch based on field observation only, is one of man's oldest intelligence vehicles. When well prepared and clearly identified as to origin, the field sketch has a great advantage in that it causes little confusion between data reflecting current observation and prior information repeated from other sources. Field sketches are virtually worthless, however, when they are so poorly prepared that their message cannot readily and reliably be linked to known features.

Figure 4 is an example of this type.

Ultimately, the greatest weakness of sketches based solely on observation may be the latitude they allow for individual expression.¹ People see the same things in different ways and often, despite training and briefing, with entirely different conceptions of what is important. Observation sketches of an industrial plant prepared independently by two observers at about the same time may be so different that the reader can hardly believe they both saw the same plant.

Some Precepts

The many different purposes field report maps serve make it difficult to lay down universally applicable rules for preparing them. Exceptions, special cases, and unique problems inevitably arise to becloud the guideposts. Nevertheless, it is reasonable to believe that observation of the principles set forth below would contribute significantly toward making such maps as useful as possible.

1. The map should be such as to convey quickly at least the gist of its message on the single page, without requiring reference to the body of the report, large-scale maps, grid systems, or other aids. This means, for one thing, that it should invariably carry a legend on its face, if only a brief version of one given in detail in the body of the report.

¹An attempt has been made to ease this problem by distributing to the field a pre-printed sketch grid accompanied by simple instructions (Sketch Map Grid GR 1384, 6-53). This plotting aid is intended to encourage sketch map compilers—interrogating officers or others—to take note of direction and distance and, most important of all, to try to bring into their sketches the element of scale. To date, it has been helpful in some cases, but whether it can be regarded as a complete success is still uncertain.

The Map

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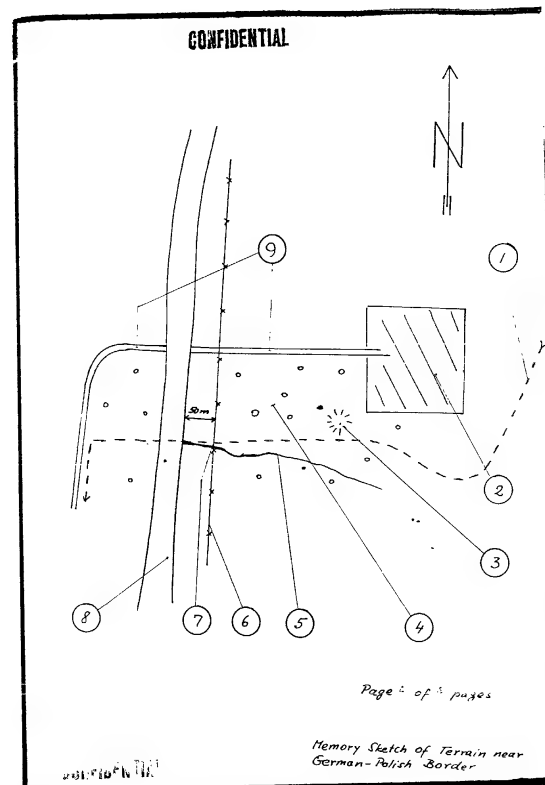


FIGURE 4. Example of a rather inadequate memory sketch. A brief legend on its face would have made it a better reporting tool.

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The Map

2. If some special purpose to be served by a map requires that it be oriented to a particular base map or grid, a second identification or orientation should be included in order to permit more general exploitation also. If the observations being reported must be oriented, for example, in relation to the Universal Transverse Mercator grid or to the sheets of an Army Map Service 1:25,000 series in order to fill a technical requirement, they should also be oriented to geographic coordinates,² place names, or prominent landmark features to make the report's message clear to all readers, including those who do not have quick and easy access to large-scale maps or explanations of the UTM or other military grid systems.
3. Reporting officers should tell, insofar as possible, how their report maps got that way, i.e., who observed what, when, from where, and under what circumstances. A sharp distinction should be maintained between data based on observation and information drawn from other sources such as pre-existing maps.
4. Officers preparing or revising report maps should be generous in including orientation aids—place names, landmark features physical and cultural, distance and direction to well-known features, etc. Better too many of these than too few.

Reports from the field and maps that accompany them are often processed by middleman reviewers and editors before being distributed to the intelligence community at large. In the opinion of this writer, the principles outlined above should in general be applied by the middlemen as well as by the

²The special purposes of some members of the intelligence community are best served by locational data expressed in terms of military grid references, whereas others prefer geographic coordinates (latitude and longitude), which permit working out locations on almost any map without recourse to large-scale coverage, detailed explanations of grid systems, conversion formulae, etc. Giving key locations (or at least one locational fix on each report map) both by geographic coordinates and by military grid reference seems to be the only certain way of serving both needs. If giving both is impractical, it seems to the present writer that geographic coordinates should be chosen: locations so expressed can be interpreted quickly and easily at most points in the intelligence community with materials on hand, as not all military grid references can be.

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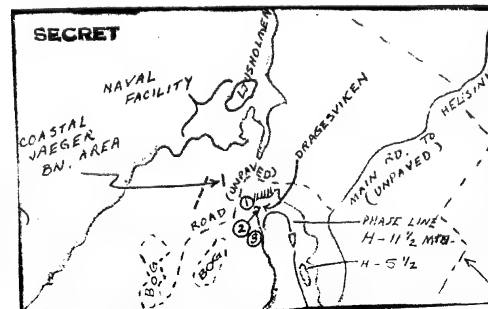
The Map

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field reporters, provided, first, that any doubts indicated by the original sources be left in unless they can be resolved, and second, that the middleman's corrections, additions, and comments be set unmistakably apart from the data that came from the field.

More prior planning between field personnel and headquarters may alleviate some of the problems that report maps present. It is important, however, that in the course of such planning the field or field-bound personnel be given a cross-section of the needs, interests, and requirements of all those likely to use the prospective reports. Prior planning oriented sharply to the interests and preferences of a few small segments of the intelligence community may work against the interests of the whole. For example, a field man being briefed in Washington may be sold by component Z on the desirability of using a particular foreign map as a base in preparing sketch maps on a certain subject. From the special viewpoint of component Z the foreign map is ideal, but from the viewpoint of the whole intelligence community, which will also try to use the reports, an Army Map Service sheet would be more satisfactory.

It has become conventional in preparing field report maps not to rely on symbols but to use words or legend-oriented letters and numbers to identify important features, as illustrated below.



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Symbols alone are as a rule used only to indicate relatively unimportant background data. This conventional procedure has been developed empirically, and the present writer, for one, believes that no overall good would come from attempting to replace it in the foreseeable future with a system of symbols.

Any experienced intelligence officer should be capable of preparing a good report map. Map know-how and drawing ability can contribute, but they are not essential and do not in themselves guarantee that the map will be a good intelligence tool. If a field report map locates things of *intelligence import*, in relation to each other and in relation to known features or fixed points, clearly and in a way that any reader can interpret quickly, it is a good map even if it is not particularly neat or pleasing to the eye; if it does not accomplish these objectives it is a poor one, regardless of aesthetic excellence.

The field report map has been a basic intelligence tool since time immemorial. The foreseeable crowding of man and his works on the surface of the earth augurs greater rather than less use of such maps in the future. The general application of simple principles to improve their quality and clarity can contribute significantly to the accurate communication of locational relationships and thus to the ultimate effectiveness of many intelligence operations.

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A coaching by the voice of experience against a common operational emergency.

YOU AND YOUR WALK-IN

F. M. Begoum

No pattern of approach has been established by walk-ins. They have come into our diplomatic missions, military installations, other official establishments; they have come to non-official concerns, to private citizens; they have come to the local services and been turned over to us; they have walked in directly to our intelligence field stations or to our intelligence officers under deep cover; they have walked in everywhere. When they appear behind the iron curtain, or more broadly speaking in hostile areas, the problems they pose may be exceedingly difficult to manage.

Our handling of walk-ins over the years has ranged from very good to abominable. Out of this experience some aspects of a walk-in case that are particularly sensitive to good or bad handling can be distinguished. They fall mainly into the categories of advance preparation, first contacts, and early planning for exploitation.

Advance Preparation

There is a certain amount of preparation that can be done. Beyond that, success depends on officer competence, usually acquired by experience. What characteristics does the school of human experience grind out? Herodotus said of Themistocles that he surpassed all others in the faculty of intuitively meeting an emergency. This is the characteristic we are looking for when it comes to handling walk-ins. Given officers with the necessary personal qualities, a proper reception of the walk-in still requires preparatory steps within the field station, with other U.S. agencies, and with respect to foreign liaison.

Be ready for the unexpected. Within the station, there should be a psychological preparedness for walk-ins. Keep tuned to the possibility that a walk-in may happen in your area at any moment. Latin America these days may be rela-

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Your Walk-in

tively calm as far as Soviets are concerned, but numbers of Castro's disaffected friends will be knocking at many different doors for some time to come. Times change in this respect. We go through Soviet periods, Hungarian periods, Czech periods, Iraqi periods, Cuban periods.¹

Know the ground rules. After attitude come the ground rules. Know the various prescribed operating procedures. An especially important one regarding walk-ins is IDCOP 58/1 dated 6 May 1960. The complications within our intelligence community these days are considerable; unless you are aware of the rules, the case can be hurt from the beginning. The CIA station chief, who, when an enemy intelligence officer presents himself, decides to leave the walk-in waiting while he calls a meeting of the defector committee is needlessly complicating his task. Time enough to call a meeting later; the espionage and counterespionage business is a CIA responsibility. This does not mean that the legitimate interest of other agencies in the matter should be slighted, but the CIA officer must exercise initiative and leadership.

Think in political terms. The newspaper headlines change from day to day. Mr. Khrushchev smiles or he scowls, he jeers or he jokes; the Iraqi and Cuban regimes fall or stand—such things form the political crux which in many instances has prompted the walk-in. Are we in a time of tension, with Khrushchev agitating about Berlin, or Mao threatening the Taiwan Straits? This makes a difference when a man comes in and says he is a Soviet intelligence agent or working for the Chinese Communists. He is played against this background. We also have a new dimension in certain areas because of United Nations interests. The political factor is an important one to keep in mind.

Know the liaison equities. Know the do's and don't's with respect to the local foreign service. How far can you go unilaterally, considering the liaison relationship? In what instances do we feel that we must tell them, and when would holding out fall within acceptable risk? This applies particu-

¹ And the Berlin wall can be expected to cause many defectors who otherwise would have escaped in Germany to show up in diverse odd places around the world.

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larly in our larger stations that tend to be sectionalized: they may have an external liaison unit that deals with the local services and an internal unit working on other activities. The walk-in may come to this latter, not the one dealing with liaison. Does it know what the real equities are? Its initial handling may prejudice the liaison relationship and may hamper efficient subsequent handling of the walk-in.

Prepare handling facilities in advance. There is nothing more disheartening than an *ad hoc* performance like the following. The telephone rings:

"We've got one! What about the house?"

"No, we can't use that house."

"Is there anyone who speaks Arabic?"

"No; I think Joe speaks a few words of Albanian. Will that do?"

"No, no! This guy only speaks Arabic."

You can't plan for everything, but you can plan for a certain number of things. This may mean taking a quiet inventory of other U.S. organizations in the area. Is there a person in another installation who speaks a likely language? Maybe you have his name recorded and have done a bit of checking to avoid the ludicrous situation of having someone walk in whom nobody can understand or question. Do a linguistic inventory in advance.

Think a bit about how we transport people, how we guard them. Get the simple technical equipment ready, so that you can pick it up and go. Try to have a secure room set up, already bugged. Have a standard operating procedure—not a dusty bureaucratic one, but one that has been given a few dry runs. In a station of any size you may have certain officers that work together best. Earmark those officers for handling particular cases. These are the things that count in making the most of opportunities. Think about a unilateral handling and about a liaison-type handling. You may have to use different officers, you may have to use different facilities; but prepare for it in advance. Don't get Joe and Charlie and Pete half way downtown in a car and then suddenly remember: "Oh my gosh, Charlie's never been exposed to the local service. Eddie, you go see if you can catch him before they get

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down there, because I don't want him blown." Or Charlie has already arrived, and you ask yourself how to explain this one.

Work out walk-in procedures with our diplomatic representations, military installations, and other offices. It is tragic to have a good walk-in or defector turned away by some unwitting clerk when he tries to make contact with us.

See that reception procedures are made known to our contacts in the host liaison services. At a minimum, hopefully, they will consult us if they get a walk-in they can't handle. If possible, we want to work up from this minimum, when we get early access, to the point of guiding the liaison service and in effect directing the case. The custody problem is always a tough one because we have no legal status. We can get into very sticky situations if we are brash—"That's all right, throw him into the cellar and we'll work him over for a couple of days"—about it. In some areas you may induce cooperation from a liaison service by feeding it information derived from walk-ins in other areas. It may stop to reflect, "There's more to handling these walk-ins than just throwing them in jail," and it may draw the correct conclusion that it should check with us the next time it has one.

First Contact

Many walk-in cases become successes or failures literally within the first five minutes. The initial moment of contact is a most critical time, and this is where the intuitive reaction to emergencies is important. The case officer whose instinct is to go scuttling behind his cover for fear of being "provoked" is not likely to handle a walk-in very well. It is a question of striking a balance between preservation of some security and possible operational gain. The right balance varies; behind the curtain, obviously, no matter how important the operational gain, security is paramount. In certain areas security is much less a factor. But inevitably all first contacts involve this search for balance.

Think in advance how you would operate within the framework of your cover, official or non-official, if a walk-in should appear. How much leeway do you have within that cover to do the things discussed below? Next, and the decision can only be taken on the spot, consider where you may be able

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to give or bend a little farther. Meeting the man outside in your car may be a personal indiscretion; talking with him inside an official installation may lead to considerable difficulty with respect to your cover agency. Most agencies dislike to have spy business done on the premises, but there are times when it has been done and has been well worth while.

What do you ask him? First, *who is he?* It is surprising how many times this obvious requirement is honored in the breach. Headquarters once received a long cable giving a full physical description but no name at all. In another the walk-in was reported to have given a name but to have said immediately that it was not his real name. Was any probing made for it? Any attempt to elicit it? Any attempt to get documents? Practice a little tradecraft. If he says, "No, I won't give you my name," ask, "Well sir, do you have any means of identification?" Maybe he says, "Yes, I have my passport, but I'm not going to show you the name." He shows you the passport, and maybe you see the number. Or later in the conversation, he makes reference to "these papers I have," or claims, "My report on this I have right here." *Could I see that?*

We are looking for information that we can check. That is why we want the man's name—patronymic and all the rest—and that is why we want him to write it out in his native script. The man has presented himself in Paris and his name is Kim and he claims to be a Korean: how helpful in this in terms of tracing? Full names are particularly important for Russians, Chinese Communists, and Satellite nationals. Headquarters' files are improving every day, and communications are fast. We have been in the business for quite a number of years; we have run a lot of cases. The Soviet service and the Chinese service may be ubiquitous, but so are we. Sometimes, through speedy cable communications, you can literally break the case while you are talking to the walk-in. In one instance the data obtained from the walk-in was taken out of the meeting, slammed on the wire, checked, and returned within four hours; and the next interrogator broke the man with the information. We do have the facilities, but something has to be put into the machine before you can get something back.

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Another point on checkable information: attempt within the station to identify sources or check records that may throw immediate light on the man who has walked in. For instance, if he says, "I'm an importer of Chinese art objects here in Santiago," is there a directory of the Santiago Chamber of Commerce? Sometimes a look at the local phone book enables you to check some of the information quickly. Be precise in obtaining and recording data. Don't be afraid to take notes. If he objects, you have at worst to stop and start memorizing.

What is he? What does he profess to be, and what do you think he is? What position, what rank, what functions; what nationality? Surprisingly enough, headquarters gets some cables which omit any reference to nationality.

What does he want? Sometimes you have to ask him. Some of our people tend to lurk behind their cover, talking busily but never quite getting to the point. *Why does he want this?* What is his claim in this respect and what do you think the real story is? Once more, are there any documents; is there any other evidence pointing to the real reason as against the professed reason?

Has he brought anything along? It is sometimes forgotten to ask, "Now you say you're here for this. Do you have anything with you that would help?" Another aspect is to check whether he is armed. Once a Soviet soldier came in buttoned up in a greatcoat. After an hour or so, he opened it because the room was getting warm, and you could see a pistol in each pocket. He was finally convinced that he was in good hands and could safely relinquish his weapons.

Don't be afraid of alienating the walk-in by asking logical questions. He has come in with something in mind. A sympathetic, calm attitude can get a lot out of him. If you are dashing around the room barking orders and telephoning, the man who was not panicked when he came in will be after you have worked with him ten or fifteen minutes. Any walk-in is under a terrific mental strain; this has been true in all cases we have had. One of your initial aims, then, is somehow to calm him down a bit.

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Some case officers are put off by people who are dirty, who behave in an erratic manner, who reek of garlic, who seem offensive or disreputable. Our personal prejudices should not be allowed to get in the way. The espionage business is one of tension. The cork may blow any time, and a walk-in is a person who in a sense has blown his top. There have been a number of defectors, particularly intelligence officers on the other side, who later did wind up in a sanitarium. Regardless of any humane aspects, our business with walk-ins is to achieve certain intelligence objectives. To do this, we have to deal with a very wide range of people, many of whom do not fit into normal patterns.

First, try to get a secure and quiet spot where you can talk. The embassy corridor is not the place to discuss business; get him off to one side. This is an essential part of preserving the security of a possible operation. Walk-ins are very strange: the man who says that under no circumstances will he go back may in two hours, after you have worked on him, agree to return and stay in place. If only during that first ten minutes you had not kept talking to him in the corridor, and the official from Section 3 of the Ministry of the Interior who knows you had not come in and seen you there! Thinking about the security of the operation, you come again to the risk point. Is there any risk involved when you tell him to come on into this particular office? Perhaps; but great undertakings do not succeed unless some risk is taken. The business of espionage and counterespionage involves taking some chances about certain things, including one's personal cover. Though cowboyism is not in order, reasonable chances can be taken.

A word about provocation. A provocation is in essence an inducement to act to your own disadvantage; but the term has taken on distorted meanings. Officers say "I didn't dare because I was afraid of being provoked." Don't let this bugaboo scare you so much that you can't operate within your cover. If the object of the provocation is to see whether anyone in the cover installation will talk to a man who comes in and says, "I'm from Z-2 of the Polish service," then the moment you shake his hand or say hello you've been provoked. An analysis of the possibility that this walk-in is a provocation attempt should be made as soon as time permits, but

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not at the expense of initial development of the walk-in on the evidence at hand. Just keep in mind that provocation pays off for the opposition only when it is able to exploit a reaction on your part. Without a revealing reaction, there can be no provocation.

The atmosphere of the initial conversation should be friendly, businesslike, sympathetic, person-to-person. Limit the number of people in contact with the walk-in to those who fit into a definite scheme. He should have, if possible, one point of focus. At the beginning, if the man has been torn or blasted from his roots in whatever organization or culture he comes from, we want to give him a point upon which he can reassemble himself psychologically. It is much better, in general, not to have a host of interpreters, or bosses, or clerks, dashing in and out. This distracts him.

Try to get along without an interpreter, especially from outside the station. Many walk-ins are antagonized by being outnumbered by "foreigners." If neither of you speaks the other's language but you both speak French poorly, it will be difficult, but probably not impossible, to handle the case without outside help. Try to do it even at the risk of taking a bit longer and at the risk of some misunderstanding unless you have your own linguist. You may want to act as a caretaker handler, handling the case until the fluent Polish speaker arrives and takes over.

Try to establish some basis of rapport; we sometimes become a bit too formal. The rapport may be a professional one: the man may be an intelligence officer and intelligence operations the thing he wants to talk about. If this is the topic of your initial conversation, your attitude varies according to your cover. On the other hand, he may say, "That's a beautiful stamp book you have on your desk. I'm a stamp collector myself." Maybe this is the time to take the heat off, answering, "Yes, I just got some new issues from Guinea; do you have these?" Give him some tie to which to cling. Establish some basis of rapport even if it has to be a bit contrived. Use your tradecraft and elicit things rather than beat them out of him.

Don't be too impatient. The thing may be important, time may be of the essence, but don't let it show. Balance the needs of the handling problem against the urgency of the information. Almost without exception, the thing to do is to

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calm him down; you will find that what he says in a highly emotional state contains many errors. Sometimes the balancing becomes very tight. For instance, the man comes in and identifies himself as a KGB officer. He has been working on a certain operation which you immediately recognize as a case of your own. You're meeting the agent in an hour, and you're meeting him in a safehouse. This is one of the situations that separate the men from the boys in the matter of getting first things done first.

The question of asylum often comes up very early. It is always a tricky one, but sometimes needless difficulties are created. You don't have to be able to say on the spot, "Yes, we are going to give you a job and a passport." The walk-in is pushing for it, always, and may say, as some hardnoses have, "Money, transportation, citizenship, or I don't talk. I'm not going to tell you anything unless you assure me that this is it. . . . Well, I will tell you that I'm an intelligence officer. . . . I'm the residentura deputy. . . . Now you know who I am. How about the passport?" Don't be thrown off guard first thing by this; recognize that he is plugging for all he can get. Remember that you have some maneuverability. We should not make commitments on which we will back down later. This is true not only for moral reasons, but for highly practical ones—word gets around.

So you walk the tightrope with respect to commitment on asylum. The basic policy is to grant political asylum to any genuine defector from the Sino-Soviet bloc. The key point is that this does not necessarily mean asylum in our country. And the emphasis is on any *genuine* defector: "Yes, you will be granted political asylum if you are what you claim to be, if you are not working for the other side," etc., etc. You have to do a lot of hedging. It is a very poor tactic to say, "We'll take you to our country if you're valuable enough." But it is extremely difficult to set a tactic that works with everyone. Know the basic policy, and be prepared for a certain amount of maneuvering and bargaining, sometimes rather bizarre. It is surprising how quickly the man comes down in his demands in order to get what he essentially requires—protection from his former colleagues or masters.

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Operational Planning

While talking to the man, start making plans. Try to begin the operational planning, even though you may not be the officer who will ultimately be responsible for it. Don't try to plan all the way through to the top echelon, but plan for the immediate future. Think about your own cover and security and how long you are going to maintain your initial attitude. Think about the political aspects. Think about the local liaison aspects. Start ticking off to one side items which have possible significance with respect to the walk-in's bona fides. Consider the provocation aspect. Look for indications that he is a fabricator. Start an assessment of his value. And, most significantly of all, think about those aspects which have an essentially perishable nature.

Do any operational exploitation possibilities which he has directly indicated or implied appear to be perishable? For instance, suppose he had just been to a big farewell party for his brother case officer, who is being transferred back to Russia, and this was what threw him over the brink—that the other chap, who also hates the regime, is leaving in an hour and a half and he'd be all alone. This is the time you might want to ask. "Now how about it, would he like to come over too?" Maybe you'd get a yes answer. It would be a shame to let this wait three hours while you sit in the safehouse, and then have him say, "I wish I'd called up my old friend Boris before he left the train," and you, caught short, "You mean he'd have come over too?"—"Probably; he was very upset."

Will he return to his installation to obtain documents or materials? The key items are cryptological materials. If a man comes in and says, "I'm the code clerk" or "I run the machines in that room up there," don't say, "Very interesting. We'll get to that later. First tell me . . ." A cable was once sent to headquarters saying that a case appeared to have excellent psywar possibilities for exploitation against a certain hostile nation and the walk-in's position in the embassy was that of code clerk—a real aberration in operational assessment! First things first, and we are still hopefully going for the operational jugular, which is commo, commo-crypto.

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Obviously, what we'd most like is an in-place source. If he will not stay in place, however, perhaps we happen to be in a position to do a decent stitch job on the pads. We just might want him to go in and get them, bring them out for an hour, two hours, three hours, and then take them back and leave.

All intelligence agencies are at fault in that everyone knows a little bit about something that by all the rules of the game he should not know about. This can apply also in the sensitive field of commo-crypto. The walk-in even from outside the commo field might be able to supply the precise bit of information that would break the code. You can get quick answers from headquarters on the business of important documents or materials, cryptological materials especially.

One caution: don't use this as a way of having him prove his bona fides. It doesn't prove his bona fides necessarily and it may just boot the whole case out the window.

Will he return to his installation as an agent? We are far more interested in in-place agents than we are in defectors. If not a flat 100-percent rule, this is about 90 percent true these days. A man has to be at quite a high level before we really want him as a defector rather than in place. The penetration is the guts of the business as far as we are concerned. The defector is valuable, but his knowledgeability with respect to current information is obviously dead the moment he leaves his installation. The in-place source is the one that truly puts us in business.

Will he undertake an operational mission? The mission might be to contact someone else, or to trap or entice someone else from the installation. It might be to induce someone to move to the point where we could trap him or make a run at him. Occasionally the walk-in can serve as the catalyst for putting to operational use material that has been months in the collecting. We have had our target selected, have gathered quantities of data, but have never been able to get an approach to him. Suddenly a walk-in appears who can provide this missing link.

Will he write or telephone a friend? There are always new twists to the well-worn letter and telephone techniques. Occasionally you can put the recipient on the spot, especially if you have compromising information. Does he report the

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letter in which you make reference to certain things he would not want his superior to know about? You would have told him, in essence, "if you don't bring this to the attention of your chiefs, we will. We'll send a copy to the home office." Sometimes he'll come over, sometimes not. In any case you have made him extremely uncomfortable.

What does this do to other operations? An aspect of walk-in defection that should be considered early is the immediate effect on our own cases when the hostile service becomes aware of the defection. Can it affect our double agents or penetrations of this service or of other targets? Does it influence the conduct of our staff officers or contract agents? Once an important Soviet defection culminating quite a series seemed to raise the temperature so high that we reluctantly put armed guards at all meetings with penetration or double agents, fearing assassination to be not beyond the realm of possibility.

What effects might there be on our operational techniques? The mere fact of the defection gives rise to security scrutiny in the opposing service, and the security review of the case may lead to an erroneous conclusion that the only way we could have got to the man was through technical means. This results in tighter audio countermeasures which in turn may affect our other operations. One of the saddest things in CI work is to have the opposition draw the right conclusion for the wrong reasons.

Perishable and Priority Information

Has he information in the CRITIC category? It is within the range of possibility, and should be looked for. But the information has to be of vital top-level interest to meet CRITIC criteria. We would look rather silly dashing off a CRITIC cable just to announce that so-and-so walked in. On the other hand, if a Soviet army officer comes in and says, "Tomorrow at five o'clock in the morning we're closing the ring around Berlin, and that's why I want out now," then get it on the wire in a hurry. Use common sense; don't panic.

Priority CI information? He may have information on opposition penetration of our installations. The opposition's key targets are in our own country. Does the man say his service has two agents in our headquarters? Find out who they are

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and get a cable on the way. Next in importance are installations behind the Curtain. If he can identify any persons in these who are opposition targets, flash the information back to headquarters. In some instances we have done quite well in getting the information to our authorities in time to have the target individuals pulled out.

He is likely to know instances of enemy control of our agents. Almost every defector we have had from an opposition intelligence service has told us of at least one man who had been doubled against us. In one startling case the officer interviewing the walk-in was making notes, and the walk-in noticed he was left-handed. After a few minutes he said, "You must be Captain Jackson." The officer nearly collapsed; this was the cover name he used in handling our most sensitive penetration of the Soviet target. It developed that the walk-in had been running the agent against us from the beginning.

High on the priority list also is information about special techniques, particularly audio and other devices, being used against us. The walk-in may say: I come from the technical support laboratory. Last week we finished installing in your Cairo embassy a new type of cavity or a new this or that. It is in the ambassador's office. It uses an entirely different principle, etc., etc.

Assessment of Bona Fides

Exhaustive psychological assessment is not a prerequisite to operational use of the subject; the ultimate explanation of the man's motivation is not an essential for his effective use. We try to get the best *practical* assessment in advance. It may be advisable to take some risks, and balanced judgment is required. The motivations of all of us could be subjected to considerable scrutiny, and we might not at the end of a long series of interrogations have given a story satisfactory from all angles. This does not keep us from being reasonably effective officers.

There is no cut-and-dried means to assess people. The longer one has lived the more one knows about people. The more experience one has had in intelligence operations dealing with intelligence people the better one should be able to assess them. We can have the psychiatrist look at the man,

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we may utilize the polygraph; but the essential thing is the assessment by the handling officer. IDCOP 59/6 sets forth a number of the assessment techniques, questions, etc. for walk-ins. These are sound pragmatic guidelines as far as they go. Other points for consideration are: Does his story ring true? Over-all, is it plausible, is it likely, is it improbable but possible, or is it all but impossible? Still one does not automatically reach a black or white conclusion. Strange things happen in the intelligence business, but there surely will be a certain ring to his story.

Does he appear to be what he claims he is? Does his physical appearance jibe with his claim? How about his manners? The way he phrases his thoughts? His vocabulary? Does he claim to be a mere salesman and then start talking about dead drops, doubles, etc.? Is he a relatively open fellow, straightforward; is he evasive; glib; apathetic; confused? Watch out for possible misinterpretation due to language difficulties. There are people who may be very smooth in their native language but don a somewhat different personality in another. This presents some difficulty in the assessment process.

What kind of person does he appear to be from a general psychological viewpoint? Is he mentally tough? Is he aggressive? Is he a charmer or a boor? Does he talk like the nuclear physicist that he claims to be? Does he talk like a man who has three doctor's degrees? What type of relationship have you been able to establish with him? How smoothly has it gone? Is it man to man? Is it professional? Some of these may seem a little out of line as strictly litmus-type tests of bona fides, but since you are the person in contact your reactions inevitably come into the assessment.

Are there any indications that he has been sent by another service? How about his documents?² Even the best-planned provocation operations have little points of weakness. Turn

²Technical analysts may require two weeks for exhaustive examination of identity documents, but preliminary analysis, photographing, and the taking of ink and paper samples can be done in two days. Sometimes imperfections are deliberately introduced into a false defector's documents to mislead us, in imitating them, into giving away our own agents. See David V. Brigance's "Credentials—Bona Fide or False" in *Studies* IV 1, p. 37 ff.

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that around: are there any indications that he was *not* sent by another service? Has he divulged any information sensitive in our evaluation that it is unlikely another service would use it as build-up material in the case? If the man comes in and says I'm coming over from such-and-such intelligence service, and you say what's your position and what are your operations, and he reels off twenty operations some particular country, two here, two there, more elsewhere—is it likely that any service would give away that much in order to build up the walk-in? A man comes in and says here is the story on the Soviet atomic energy program at such and such a place, chapter and verse, a lot of it checkable or we can extrapolate a lot from it. Is it likely that the Soviets would give away so much material in order to try to establish the bona fides or a portion of the bona fides of a man?

Are there any indications that he is a fabricator? Many of us have been taken in by fabricators. Their general tendency is to over-sell. The man does not merely have the mobilization plans for weapons deployment by rail; he just happens also to have access to the missile designs, he happens to have this and he happens to have that. He does not have just one source sitting in some outlying province but he has a whole net of twenty-five people.

Is there any indication that the walk-in is mentally unbalanced? This may not mean that he has no value. It just means that he is a tougher handling problem and that he cannot be used for certain things.

Some Don't's for Walk-in-Handlers

Don't bring non-staff personnel into the affair unless it is absolutely necessary. Don't expose more staff personnel than necessary either. Convenience is not enough; better sweat with him for three or four hours than to bring in someone merely because it is convenient.

Don't leave the walk-in alone. Otherwise he may dash off and hop into a taxi, you trailing along behind trying to get him back. Every time this rule has been broken it has been one of the major contributing factors to a great flap. The has seldom been a walk-in who at one time or another fair

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early in the game did not have second thoughts, and sometimes if he is in a position to go back he will. If you are there with him maybe he can be talked out of it, or maybe he just won't have the guts to get up and try to walk out the door. Don't leave him alone.

Don't make specific commitments on the visa business.

Don't try to convert the walk-in from Communism. A so-called expert brought in on one case was supposed to debrief the defecting intelligence officer about what he did for the service. He spent the first hour arguing about the horrors of Communism to this chap, who was a hardened Communist and also a fairly hardened intelligence officer. The walk-in was not convinced; in fact he figuratively kept twisting the interviewer over his shoulder and throwing him. They wound up almost at blows. We are not trying to convert them overnight. What we want from them initially is information. Their political attitude may be changed later, or maybe never.

Don't press him for an immediate signature of the asylum statement. On the other hand, if he volunteers or shows no great resistance, by all means get it sooner rather than later. In some circumstances you can say "Fine, welcome, I can assure you now that you have been granted general political asylum; would you please, etc., etc." Some walk-ins do not want to sign it for a while, some may not be interested in signing it for a very long time, and some never. Most will eventually.³

Don't become so psychologically intoxicated by the glamor of it all and by your own tremendous performance that you drop your guard. With an enemy intelligence officer one might succumb to the temptation to discuss fascinating details of a complicated double agent case he had handled from

³The handwritten and signed statement requesting asylum, denouncing the defector's own government, and affirming that if he reappears in its jurisdiction it will be because he has been kidnapped, affords us considerable protection. Penetration agents and provocateurs usually are most reluctant to sign such papers; the signed statement reduces the chances of redefection; and it protects us against charges of kidnapping or coercion.

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the other side. Pretty soon you are needlessly telling him how you handled your side of it.

Don't give the walk-in material for feed-back. This is particularly hazardous when you may be dealing with a fabricator. The clever fabricator puts out a little bit, you pounce on it and indicate to him your area of interest, etc. Some fabricators have had our officers on the hook for a couple of weeks simply by running from one session to another fabricating for each from the material they received at the last.

Don't send half-baked cables to headquarters. Calm down a little and take time to prepare one carefully. It is a good idea to get your cables out fast in certain situations, but don't drown headquarters with a lot of words that still may not convey the essential detail.

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COMMUNICATIONS TO THE EDITORS

Professional Status

Dear Sirs:

The following reflections were occasioned by the reading of Mr. Phillips D. Carleton's communication in your Fall 1961 issue.¹

"A real pro," we say, shining with admiration; but meaning what, exactly? We also say, "Well, that's his profession (business), he ought to know." What is your profession?—beautician, lawyer, mason, agricultural engineer, colorist, sanitarian, intelligence officer, intelligence analyst, intelligence operator? Intelligence *what*? He is a professional intelligence something. Intelligence is his profession, his field, his specialty. He gets paid for it; therefore, he is a professional. And if you do something long enough to earn a living at it, you develop ease, familiarity, knowledge; you know what to expect, become able to predict events within a certain category of data; you have *professional ease* in the field.

But is there a body of knowledge, a body of doctrine to become familiar with and so become practitioner of a profession, with pince-nez and discreet gold insignia here and there? What is the essence of what we call a profession—is it knowledge of an esoteric body of knowledge, as in law or medicine? Or is it simply ease and familiarity with whatever there is to be known relative to your work, as for, say, a teacher of history. What body of doctrine does he and his professional colleague in the English or Philosophy faculty agree on? They can hardly agree to speak to each other except of indifferent matters.

The concern for a professional status for intelligence seems odd to one fresh from consulting Webster, who deposes, under *profession*, (after dealing with 1, 2, and 3, concerned with religion): 4: *The occupation, if not commercial, mechanical, agricultural, or the like, to which one devotes oneself; a calling; as, the profession of arms, or teaching; the three professions, or the learned professions, of theology, law and medicine . . .*

Intelligence falls under the profession of arms. The learned professions, as opposed to that of arms, were distinguished

¹ Page 53 ff.

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originally from other work as means of earning a living acceptable to a gentleman. If enough gentlemen continue to undertake intelligence activities, the status of intelligence will remain high. Like polo. (Medicine, incidentally, has always been a rather forced growth in this regard.) The question as to whether intelligence is a learned profession is therefore misdirected: is *arms* a learned profession? Historically, no; and today, of course, the profession of arms encompasses all trades and all professions.

The statesman includes arms among his means; the ruler moves in concert with his statesmen; and every ruler has his intelligence. The status of intelligence is not so much learned as royal. Intelligence derives its prestige only secondarily from its basis in knowledge or learning; its prestige derives primarily from its proximity to the dread power of the Sovereign.

H. H. COOPER

Dear Sirs:

Mr. Cooper has put forward an opinion on intelligence and its place in government that he has defended logically and set in proper historical perspective. It is a good opinion and I accord it due respect despite the fact that it is diametrically opposed to my own idea of what the profession of intelligence should be. Neither Mr. Cooper nor I have any firm grasp on ultimate truth.

My recent essay did not object to a multiplicity of opinions among intelligence officers. Its thesis was simply that a career service must be founded on a single, clearly understood concept that should be imposed by authority. The source of the concept is unimportant; it is only necessary that there be a rational doctrine. Once established, the doctrine becomes the framework to which training, rotation, promotion, and accomplishment can be adjusted. Today we lack the coherence and stability that such a doctrine can give to an organization or a community.

PHILLIPS D. CARLETON

Articles and book reviews on the following pages are unclassified and may for convenience be detached from the classified body of the *Studies* if their origin therein is protected. The authors of articles are identified in the table of contents preceding page 1.

The editors gratefully acknowledge the assistance of Mr. Walter Pforzheimer, Curator of the CIA Historical Intelligence Collection, in scanning current public literature for intelligence materials, and of the intelligence officers who prepared book reviews for this issue of the *Studies*. Most notable in this respect are the following:

"National Character"	SHERMAN KENT	25X1
<i>Soviet Spy Ring</i>		
Evasion and Escape		

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Intelligence Articles VI 2

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*Excerpts from a correspondent's
interview with a prewar Euro-
pean intelligence chief, who
says he takes—*

A DIM VIEW OF WOMEN

Chef de Renseignements

As agents, mind you. Personally, I'm quite fond of women, and attracted sometimes by their very faults. But as the officer responsible for supplying my government with foreign intelligence, I had to regard them as unreliable and insecure elements in the organization, to be used only when all circumstances chanced to be favorable or when I had no choice.

An agent should be calm, unostentatious, and reticent. Women are emotional, vain, loquacious. They fall in love easily and without discrimination. They are impatient with the strict requirements of security measures. They withstand hardships poorly. Moreover, they tend to become even less capable physically and less responsible mentally for several days out of every month.

I'm talking about European women, of course. American women may be quite different, for all I know.

Wives and mothers are out, anyhow; they're tied down. And what can you do with the career girls? They hardly ever work themselves up into important enough jobs in a target enterprise to become primary sources of information on it. There used to be simple little duties like counting boxcars or military uniforms—observational reporting in general—they could do, but nowadays you have technical devices to take care of this sort of thing.

Oh, they can be couriers. The only completely successful woman agent I ever had, as far as I can remember, was a courier. She was a laborer's wife, and had a baby. They were Germans. They lived on our side of the border, but he worked over in Germany. She used to walk across with the baby to take him his lunch and things. We paid her to pick up messages from a drop and bring them back. She put them in the baby's diaper, and the customs guard never bothered her.

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This went on for almost a year until the source on the other side dried up. She was my outstanding woman agent.

There was another courier, a young and pretty one, who had a legitimate reason for going to Dresden regularly. We used her to bring reports from an important source there. She wasn't expensive, either, as the attractive ones are likely to be. She carried the messages through customs inspection in a private female hiding-place. But she lasted less than three months; her nerves collapsed completely and I had to release her.

Then there are the clerks and secretaries. They seem logical enough as agents, and no doubt they sometimes work out. But let me tell you about two sad experiences, one of my own and one another service had, to illustrate the dangers. In the early years of the Nazi regime the German War Ministry used to recruit its secretaries from the families of the old nobility, long since impoverished. The intelligence service in an adjacent country—I had some liaison connections with it—looked these girls over carefully and spotted two that might be open to persuasion. It took plenty of cultivating and too much money, but they finally agreed to make an extra copy of everything they typed and deliver it to a cut-out.

Well, the first delivery was the last one. One of the girls ran right downtown with her pay for it and bought a fine fur coat. She told her surprised mother that her boss the Colonel had awarded her a big bonus for overtime work. Next day the mother telephoned the Colonel, an old social acquaintance, to say how pleased and grateful she was. Naturally there was an investigation. The girls were arrested and forced to confess. They were executed, with Nazi delicacy, with an axe. Maybe the case officer had been lax in his security admonitions; more likely the girl just couldn't resist. You know how women are.

Or do you? The other secretary case may shock you; I still shudder about it. After Hitler came to power one of the most important things we could do was penetrate the Nazi and front organizations in our country that were working to subvert us. One of my talent-spotters put us onto a "Volk-deutsch" secretary in the local Nazi headquarters. Before long she agreed to cooperate, and for reasonable pay. She

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started work immediately, delivering copies of everything she typed. She was very conscientious, as Germans usually are, and soon became a valuable source of information on the whole subversive movement. All went well for some months.

Then her case officer brought a letter she'd insisted be delivered to the chief. It was a very long one, giving the history of her love life in lurid and unnecessary detail. From the time she was a teenager, it seems, she had been ugly and fat. Men had not been interested in her, so she began to take care of her own sexual needs. Eventually she had to spend a year in a sanitarium to be cured of her onanism. The cure was successful, all right, but she emerged a nymphomaniac. Now when desire came upon her she was unable to control herself.

"I am now in your service," she wrote. "You should have the greatest interest in my reliability. If you do not want me to get mixed up with the wrong kind of people you will have to keep my hunger satisfied. Otherwise I cannot guarantee that in my weak moments I would not divulge my connection with you to an unauthorized person, of which there are many in this office."

What could I do? The information she supplied was too important to the nation's security to think of getting rid of her. I called several of my bachelor officers together, explained the situation in strictly professional terms, and instructed them to alternate in taking care of her. It was hardship duty—she was not only unattractive but terribly demanding—but it saved the day. She continued to work for us until the Germans overran the country. Later I heard that she was discovered by the Gestapo and executed.

You can see why I'm not sold on using females for jobs that men can do. If you're thinking about them as lures for target males it's even worse. That kind of business belongs to the world of paperbacks and movie thrillers, mostly. Even the celebrated Mata Hari, however titillating her story, got no important information for the German Abwehr; she scarcely deserved her execution. And the other famous female Abwehr agent in the first world war, Mademoiselle Docteur, was no real woman but an Amazon. She ended in a Swiss lunatic asylum.

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Think of the requirements for mounting a secure operation with a woman's charms as lure. First of all you have a lot of investigating to do to determine whether the target male is susceptible to this sort of thing. Then the woman has to be young and beautiful to be effective. Then she has to be reliable. Then she has to be without moral scruples. The lack of moral scruple prejudices her reliability; in a man it would often be enough to disqualify him as a reliable agent. This contradiction is the reason such operations boomerang, and not seldom.

Choosing the right case officer is a delicate matter, too. Once we found out that a divorcee in one of the provinces bordering Germany, a woman in her thirties and quite attractive, was the mistress of a Reichswehr major and frequently went into Germany to visit him. A local case officer was instructed to work on her and try to develop the promising potential operation. The beginnings were very satisfactory: the woman agreed, after some hesitation, to collaborate. Then suddenly the case officer's reports became unencouraging and vague. I sent a man to investigate, and it turned out that the case officer had fallen in love with her and was so jealous of the major that he wouldn't let her go to see him. Anything can happen with a woman.

The most expensive and least productive agent I ever had was one of these lure-women. She had all the qualifications. She had been a society beauty, and in middle age she was still attractive. She freely dispensed her bodily charms to all comers. Without scruple, she was capable of anything; blackmail she considered an innocent little joke. She spoke eight languages fluently, and she could get along in a couple of others. She had been married to an ambassador. After her husband was killed in an auto accident she soon was in financial trouble; but her connections were good. One day I received an order from the Prime Minister to employ her at an outrageous salary. I sent her to work with a group of people I had in Denmark. She never produced a thing. I couldn't fire her, but the German occupation of Denmark finally took her off my hands.

When it became obvious that my own country was in mortal danger from the Germans, hundreds of people came to us to

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ask if they could help. A lot of these were young girls, some even in their teens. Their patriotic motivation was touching; but they had no experience, even in the layman's world, and their concept of intelligence work came straight from the spy novels. My personnel people would let them down as gently as possible. But one they brought to me.

I knew who she was. Daughter of a rich and prominent family, she couldn't have been the sixteen that she claimed, hardly more than fourteen. She was wearing an expensive fur coat. I asked her what she thought she could do for us. She could do plenty, she said, because she could offer something a man can't. I asked whether her mother knew about all this, and when she admitted she didn't I telephoned for her to come and pick her daughter up. It turned out the mother didn't know about the fur coat, either, or the boy friend that had given it to her. We started quite a little social scandal that day.

So you can say that my experiences with women in intelligence have been neither good nor inspiring. There are times when women can be used, but these are a matter of infrequent lucky chance. A successful woman operation is the exception. You have to remember that the woman who accepts the role of lure must have some moral or mental defect and so brings a built-in hazard to the operation.

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Reorganization of Japanese military intelligence in Manchuria after the outbreak of war in Europe.

ANTI-SOVIET OPERATIONS OF
KWANTUNG ARMY INTELLIGENCE,
1940-41¹

In April 1940 Japanese military strength in Manchuria, consisting mainly of the Kwantung Army, was in the midst of a general expansion. The number of divisions had increased from two in 1931, when the Mukden Incident led to full Japanese control of Manchuria, to nine. Nondivisional strength, moreover, a significant proportion of the total Japanese garrison, had increased steadily. In the intelligence establishment, however, personnel strength had lagged and tactical and organizational deficiencies persisted.

As described in an earlier article,² the principal operating intelligence units, responsible for espionage, propaganda, and sabotage, had been the Army Special Services Agencies in the field, a large one at Harbin, whose diversified operations included document and radio broadcast analysis, and seven "front-line" ASSA's mostly located near the borders, which interrogated refugees and deserters and tried without much success to run cross-border operations into the Soviet Union. These all reported in parallel direct to the Kwantung Army's headquarters Intelligence Section in Changchun, which therefore had tended to function as an operations management center and neglect its duties as a member of the headquarters' planning and policy staff. In addition to the ASSA's

¹ This article is based on unclassified historical data compiled, with the assistance of personnel of the Japanese Kwantung Army, by the Military History Section of Headquarters, Army Forces Far East, and distributed by the Office of Military History, Department of the Army. The principal source is Volume X of the series *Japanese Special Studies on Manchuria*, issued in June 1955 under the title "Japanese Intelligence Planning Against the USSR."

² "Anti-Soviet Operations of Kwantung Army Intelligence, 1931-39," Intelligence Articles IV 2, p. 25 ff.

Kwantung Army Intelligence

there were teams for visual observation of Soviet territory attached to tactical units stationed on the border and a Research Unit responsible at first only for breaking Soviet cipher messages but later for some plain-text traffic also. Plain-text communications intelligence had originally been the responsibility of a branch of the South Manchurian Railway Company—reporting, in another anomaly, not to the Intelligence Section but to the Operations Section at headquarters—which still handled the interception and analysis of traffic concerning the progress of the Baikal-Amur Magistral being constructed by the Soviets to supplement the Trans-Siberian Railroad.

The poor performance of this intelligence set-up during the Nomonhan incident, an engagement of divisional magnitude with Soviet troops near the Mongolian border in the middle of 1939, was investigated by a Nomonhan Incident Research Committee formed in December of that year, and the following spring saw the beginning of a reorganization stimulated by its findings.

This reorganization had two principal objectives: to separate the intelligence policy and planning echelon from the operating echelon; and to place the control of the ASSA's in a single intermediate headquarters. The policy and planning element, the Army headquarters Intelligence Section, would remain organically unchanged and would continue to exercise staff supervision over the ASSA's, but its tendency to translate its supervisory responsibility into operational control would be curtailed. The reorganization sought also to define the scope of operating units' functions, to tighten control over the ASSA's, and to provide separate units to handle different categories of intelligence.

The KAIG

The first step in the reorganization process was the creation of a Kwantung Army Intelligence Group to which all ASSA's were assigned for administration and operational control. The KAIG itself was immediately subordinate to the commanding general. The headquarters Intelligence Section was thus relieved of the many operational duties it had assumed while the ASSA's were subject to its direct control and was

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enabled to devote its entire attention to its mission of evaluating information and preparing intelligence estimates.

The outlying ASSA's, redesignated KAIG field branches, were augmented in number until they ultimately made 11 main branches and 6 sub-branches. At KAIG headquarters, formed from the Harbin ASSA, the principal component was an Intelligence Department staffed by 10 intelligence officers, 150 NCO's, and an undetermined number of Army civilians and other employees such as White Russians. The Department had separate divisions for Espionage, Documents, Communications, Propaganda and Sabotage, and Research. In addition, there were two Schools, one for Interpreter Training and one for Espionage Training.

Organization was not uniform among the field branches, varying with their mission, volume of work, and location. Most of them had, beside a chief and deputy, one to three intelligence officers. At least two were given duties extraneous to the KAIG intelligence mission: the Apaka Branch, organized in eastern Mongolia after the Kwantung Army had made an advance there, served simultaneously as an agency of the newly-formed Mongolia Garrison Army; and the Mukden Branch was required to supervise the key munitions industries in the area. These undesirable diversions from the intelligence point of view were ordered by Kwantung Army Headquarters.

The KAIG mission did not include communications intelligence, which the investigation of the Nomonhan incident had determined to be the weakest link in the Kwantung Army's intelligence establishment. This was given to two organizations especially established for the purpose, one for the interception and deciphering of cryptographic messages, the other for the interception and analysis of plain-text messages.

Cipher Intercepts

To handle cryptographic intercepts a Kwantung Army Communication Intelligence Group was formed, based on the old Research Unit but with considerably augmented organization and equipment. The Communication Intelligence Group concentrated on Soviet cryptographic traffic and, except for a separate Kwantung Army Air Force organization specializing in

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Soviet Air Force codes, had exclusive responsibility in this field; other cryptanalytic activities of the Japanese Army were confined to other countries than the Soviet Union.

Several steps were taken to increase the Group's capacity for deciphering Soviet traffic, and one of these was made possible by a little-known history of Japanese-Polish cooperation in anti-Soviet intelligence; it had been this collaboration between the general staffs of the Japanese and Polish armies in the thirties that had resulted in the formation of the old Research Unit. When the Polish General Staff collapsed in 1939 with the fall of Warsaw, four of its qualified intelligence officers, including one cryptanalyst, facing capture by Soviet forces, were recruited by the Japanese military attaché and dispatched to Japan, arriving in March 1940. After Japan signed the Tripartite Pact with Germany and Italy, three of them left for London to join the Polish Army Headquarters in exile, but it was suggested to the cryptanalytic expert that he stay in Japan because of his past friendly relations with the Japanese Army General Staff. This man was put in charge of the Communication Intelligence Group's research effort, and he rendered significant service in improving techniques for deciphering Soviet codes.

Plain Text and Traffic Patterns

The South Manchurian Railway Company's and more recently the Research Unit's successes with the interception of messages in clear text had increased the importance accorded by the Intelligence Section to this aspect of communications intelligence. Consequently it was decided to expand facilities for interception of both wireless telegraphy and radiotelephone traffic and also to commence intensified study and research on the Soviet Union's entire Far Eastern signal complex, plotting the location of all types of communications stations as a basis for estimating the strength and disposition of the Soviet forces. The plans, which received full support from all echelons, including the Army General Staff, called for an uninterrupted surveillance of Soviet communications activity that would make it possible to draw conclusions from such data as numbers of transmissions daily, volumes of traffic, and changes in established patterns.

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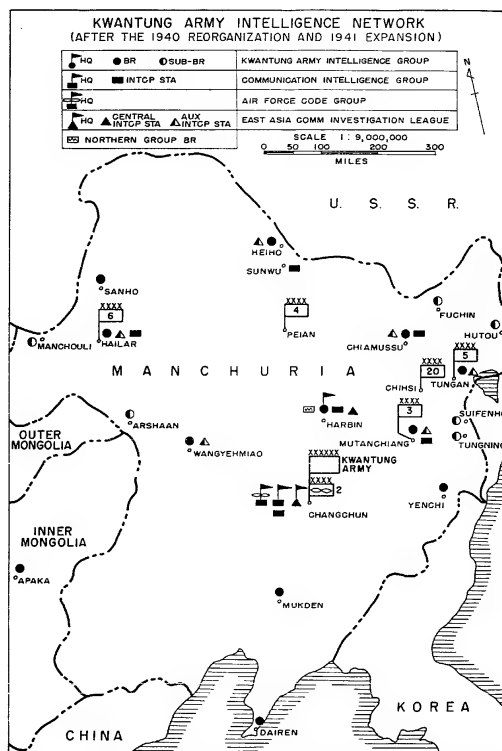
A principal step in the implementation of this program was the formation in August 1940 of an East Asia Communication Investigation League to monitor and copy the Soviet traffic. Its personnel were drawn mainly from the Manchurian Telephone and Telegraph Company, an organ of the Manchukuoan Government. The League was allocated equipment and supplies valued at \$425,000 and was subordinated to the Kwantung Army commander. The Intelligence Section exercised staff supervision over its organization, installations, and activities and was to be forwarded its product daily.

In the spring of 1941, as the League began to be effective, it had about 320 communication technicians and intelligence personnel distributed among eight components. Its headquarters at Changchun included a section numbering about 50 that was responsible for evaluating the information obtained from the intercept stations. The Intelligence Section assigned one of its officers who had received training in communications intelligence to this headquarters. It assigned another to the League's Central Intercept Station, established in Harbin. This station, equipped with excellent facilities for intercepting both manual and automatic transmissions, performed in addition to the recording and copying of wireless telegraph and radiotelephone communications the functions of collating data obtained from these interceptions, determining the locations of Soviet transmitters and keeping their transmissions under uninterrupted study, and doing research on communications technology, especially interception techniques. In six cities where the KAIG had espionage branches the League established auxiliary intercept stations operating under the command of the local KAIG chief and responsible for copying local telegraphic communications and monitoring Soviet radio broadcasts. Plans to equip these stations with direction finders to assist the Central Station in fixing transmitter locations never materialized.

At this time a Technical Advisory Committee was formed to give the League the benefit of outside expertise. Consisting of six civilian communication experts from Japan, it was to keep abreast of new developments in communications equipment and techniques in order to anticipate improvements in

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Soviet communications. The Committee made significant contributions to improved interception of messages in Manchuria, and it also was of assistance to the intercept agencies of the

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Army General Staff in Tokyo, particularly during the closing days of the war.

Kwantung Army intelligence planners had expected the League to absorb the original agency to venture into the field of plain-text interception, the Northern Group Branch of the South Manchurian Railway's Communication Research Department. Differences which developed between the two organizations, however, militated against their merger, and the Railway's unit continued to function under the Operations Section, although it did furnish information to the Intelligence Section.

Other Measures

Physical scrutiny of Soviet territory, the principal intelligence activity of the tactical commands, was greatly improved by measures taken after the Nomonhan Incident. Observation teams were enabled to work more efficiently, especially after the spring of 1941, by being furnished more and better telescopes, an increased number of observation points, and improved techniques. One defect in the system which continued to be felt was that all personnel for the observation teams were drawn from the tactical units and so reduced the strength of the combat echelons manning the Soviet border.

By June 1941, when hostilities broke out between Germany and the Soviet Union, the Intelligence Section had relinquished direct control of field activities and resumed its normal duties. No longer attempting to control a scattering of small units, it restricted itself to supervision of the three major intelligence agencies and the intelligence sections of the tactical commands.

Of other steps taken by the Intelligence Section to enhance the efficiency of operations, the most notable were the revision of the Peacetime Intelligence Service Regulations, the development of Wartime Intelligence Service Regulations, and the establishment of procedures for processing raw intelligence. The revision of the peacetime regulations was primarily a matter of adjusting them to the changes in operational control and supervision resulting from the reorganization. The formulation in March 1941 of emergency or wartime regulations, which fulfilled a recommendation of the Nomonhan Incident

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Research Committee, led to a provision in the Kwantung Army's emergency mobilization plan for organizing, in an emergency, five field intelligence units to be assigned to the front-line armies. This concept grew from the Harbin ASSA's initiative in organizing and sending three such units to the front during the Nomonhan incident. In its study of the processing of raw data, the Intelligence Section took the position that sound conclusions could be drawn only by systematic examination and evaluation after the raw and often fragmentary information had been accumulated and collated. In order to highlight this outlook, the Intelligence Section redesignated its Intelligence Division the "Evaluation Division." Composed of experienced military and civilian personnel, this division was closely supervised by the chief of the Intelligence Section himself.

An important additional measure taken by the Kwantung Army was the establishment, for the first time, of an intelligence communication network. The completion of an underground cable from Changchun to Harbin gave the Intelligence Section a direct telephone line to the KAIG headquarters for intelligence matters exclusively. A communications system between each army headquarters in the field and its Soviet territory observation teams had been organized earlier.

The improvements in the Kwantung Army intelligence organization recommended by the Nomonhan Incident Research Committee had nearly been completed by June 1941 when Germany attacked the Soviet Union. These improvements, however, except for the provision of the Wartime Intelligence Service Regulations, were within the framework of peacetime organization and operations. The instrumentality for implementing these regulations and converting the complex to a wartime footing was the "Kwantung Army Special Maneuvers" ordered now as a cover for contingent mobilization against the USSR.

Mobilization for War

The Kwantung Army's General Staff, assessing the situation after the outbreak of German-Soviet hostilities, concluded that its best course was to watch and wait for developments in what promised to be a long conflict, meanwhile only

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tightening its security measures against the Soviet Union. Authorities in Tokyo, however, attached greater weight to word from the German High Command through the Japanese ambassador in Berlin that operations against the Soviet Union would develop rapidly. In early July the Government decided that although Japan should not intervene for the present, if the German campaign created a favorable situation she should settle by force of arms the matter of the Soviet presence in the Far East. The General Staff in Tokyo consequently decided to reinforce Manchuria secretly, doubling the Kwantung Army's strength. For the ostensible purpose of the Special Maneuvers a mobilization was effected in Manchuria and reinforcements were sent from Japan—two divisions, 200 smaller ground units, and 100 air service units.

The Kwantung Army's intelligence organization was now put on a corresponding semi-wartime footing. On the basis of the wartime regulations formulated a few months before, additional intelligence personnel were authorized and obtained; funds and equipment on a huge scale became available. Having long felt that support for anti-Soviet intelligence operations was neglected, the Intelligence Section grasped this opportunity to expedite the completion of its planned improvement and an expansion on a wartime basis. Although its strenuous efforts along this line were aimed more at securing a long-desired improvement in the intelligence organization than at preparing for probable hostilities, the result was the creation of a wartime intelligence establishment and changes among its components. Among these changes were the following.

The observation teams scrutinizing Soviet territory were strengthened. Additional personnel to the number of 700 or 800 were made available, and each team was placed under direct control of Kwantung Army Headquarters, remaining dependent on tactical units only for supply and administration. A communications network linking each team directly with the Headquarters was installed.

Battlefield intelligence units as originally conceived during the Nomonhan Incident were organized on an emergency basis. These units, numbering each about 20 persons, had transportation and communication facilities. Their mission

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was the collection of field data from POW's, documents, and similar sources, and the initial disposition of this information. Placed under the direct control of the local intelligence staff officer in order to facilitate distribution of collected information, they were to assist him in his peace-time duties until hostilities began.

Similarly the KAIG, besides reinforcing elements of its own headquarters and each field branch with additional personnel, prepared to organize several "field collection teams" to be sent wherever they were needed at any time. They were to collect data needed in prolonged operations, both from the battlefield intelligence units and by their own activity, reporting it rapidly to each field army and to the KAIG.

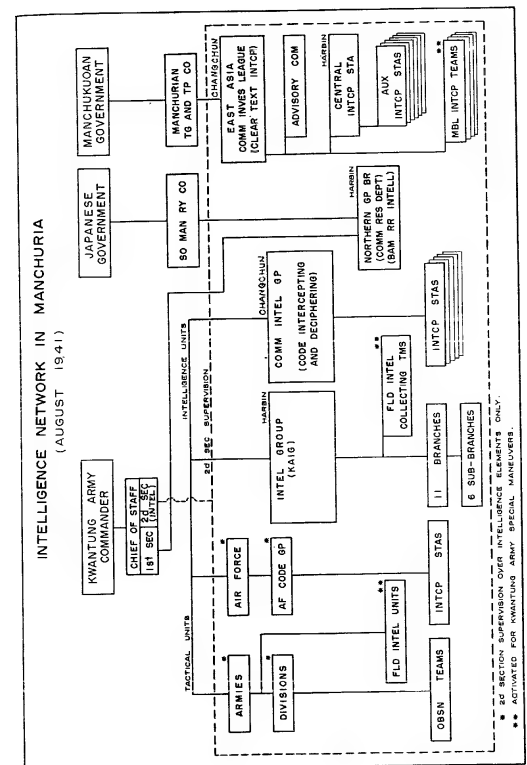
The East Asia Communication League was ordered to organize four mobile interception groups with a double mission—to provide tactical units with intercepted battlefield data, and to assist in deciphering coded Soviet traffic. Although the League was restricted to the interception of plain-text messages, these provided clues for the decipherment of encrypted traffic because they often duplicated or were related to those in code. The League organized these mobile groups, and the Intelligence Section planned to assign one of them to each front-line army headquarters at the appropriate time.

Assessment of Results

The expansion of the Kwantung Army's intelligence establishment stimulated by the Nomonhan Incident was thus given an exceptional urgency through the "Special Maneuvers." When war broke out in the Pacific some of the planned reorganization and expansion remained to be completed, but the network had attained its largest size and intelligence operations showed a marked improvement in almost every respect.

In the cryptology field the Communication Intelligence Group continued to be successful in deciphering Soviet codes of four letters and in keeping abreast of changes in the code keys. Moreover, the Air Force Code Group had also made progress: in the spring of 1941 it learned many details about Soviet air maneuvers in the Trans-Baikal by deciphering encrypted traffic. The East Asia Communication Investigation League, through intercepting plain-text telegraphic messages,

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continuously obtained significant fragmentary data bearing on the Soviet forces, much of it from telegrams sent home by Soviet soldiers which revealed details of local mobilizations and the arrival of fresh units in the Far East. Such message traffic provided information on the formation of new divisions in the Far East to replace the four sniper divisions hurried westward shortly after the German invasion.

Uninterrupted study of the Soviet communications system developed a detailed knowledge of its organization and enabled the Kwantung Army to learn through station calls the disposition of Soviet air and ground strength. This constant study also made possible the quick recognition of changes in the usual Soviet communications routine that might be significant. For example, it was reported at about 1300 hours on 2 August 1941 that communications in the Soviet Far Eastern area had been suspended for about two hours. Considering that such a black-out might indicate an imminent Soviet move, the Intelligence Section alerted the commanders concerned and reported the information to Tokyo by telephone. So heavily did the Tokyo General Staff weigh this information that the Government convened an emergency conference with Imperial General Headquarters. That evening, however, the black-out was found to be due to propagation conditions, and the alert was lifted.

The observation teams scrutinizing Soviet territory greatly improved their work, including the statistical recording of all observed troop movements in most minute detail. Observations by the Third Army in the spring of 1941, for example, detailed the progress of Soviet army maneuvers being held in the Mountain Provinces east of Suifenho. The observational data was so complete and carefully compiled that when German-Soviet hostilities began both the movement of Soviet troops westward to the front and their replacement by personnel, weapons, and equipment moving eastward were noted in detail, along with the operation of the military rail trains and their loading and unloading points.

A rich mine of intelligence information were deserters from Soviet territory, who increased in numbers after the war with Germany began. In some localities they were reported at the rate of one every two days; at the end of 1941 they totalled

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about 130, mostly Soviet soldiers. Nearly all of them were taken to KAIG front-line branches for immediate questioning and later to KAIG headquarters in Harbin for further interrogation. By collating their statements KAIG ascertained the scale of Soviet mobilization, the approximate number, age, and quality of men drafted, the movement of units between the European and Far Eastern reaches of the Soviet Union, and the organization and equipment of the units. This flow of information more than compensated for KAIG's inadequate trans-border espionage. Stimulated by the scale of desertion from Soviet territory and the deserters' readiness to give information, the KAIG planned a program of inducing more of them, but the outbreak of war in the Pacific forestalled its application.

The overall performance of Kwantung Army intelligence must be considered of mixed quality, and its successes were relatively minor. Its lack of spectacular achievements can be attributed at least in part to Japan's wartime policy of avoiding provocation of the Soviet Union and restricting operations to the maintenance of close surveillance over Soviet activities, a difficult assignment to carry out under a limitation to the use of inoffensive means. There were, however, improvements in the intelligence mechanism as a result of the extensive reorganization and expansion. In many instances the resulting product was of good quality. The continuous accumulation of fragmentary data did lead to noticeable gains over the less well founded intelligence offered in earlier phases of the Japanese military venture in Manchuria. The Intelligence Section was enabled to assess data on the Soviet area with much more confidence and to make more valid estimates of the enemy situation. In the first year of war in the Pacific, Kwantung Army intelligence offered promise of considerable accomplishment, having been strengthened during the Special Maneuvers, having steadily improved its efficiency, and having amassed a store of significant information.

As the course of the war turned unfavorable for Japan, the strength of the Kwantung Army was reduced in a piecemeal fashion to provide reinforcements for Japanese forces in active combat theaters. As a consequence the intelligence organization was given less and less support, and with decreasing per-

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sonnel, fiscal resources, and equipment it unquestionably found it more and more difficult to perform its mission. Detailed information on its wartime performance, however, is practically non-existent: at the end of the war almost all personnel who had been engaged in anti-Soviet intelligence had been captured and all documents and records captured or destroyed.

Some recent Communist intelligence operations run from East Berlin.

PORTHOLE TO THE WEST

One of the reasons the United States is so belligerent about West Berlin, the Soviets charge, is that the NATO countries have made the city their most active "hotbed of espionage and subversion against the Socialist camp," or, taken out of propagandistic language, their most useful intelligence window to the East. Could be; but every shoe has its mate, and one of the reasons the Communists were for so long reluctant to cut their losses by sealing the border between sectors must have been the crimp it would put into *East* Berlin's most influential big business—intelligence activity. In addition to the locally ubiquitous East German services, four distinct Soviet intelligence services and at least one from every other Bloc country are there. Some four score intelligence establishments have been located and identified in midcity, Pankow, and around the suburbs, most notably in Karlshorst, where five or six hundred Soviet officers have a fifty-acre compound to themselves. From these offices has streamed a torrent of intelligence operations ranging from garden-variety espionage to kidnapping and assassination. The reader is invited to sample them in the following case sketches drawn from the past few years.

Dearly Beloved

Eleanor was an American girl working in a U.S. office in Bonn last year. She was ripe for romance, and Europe was the place to find it. At the Embassy Club she met Paul, a naturalized American who retained the old-world charm that always draws a knot of women. Nevertheless he had eyes only for her, and in the succeeding weeks time only for her. Soon it was more than a gay romance; it was the real once-in-a-lifetime thing. They were going to be married. But not for several weeks; right now he had to go to West Berlin.

In West Berlin Paul lived with a German friend. He wrote or telephoned every day. But one day it was the friend that telephoned: Paul had had a serious automobile accident and

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was in an East Berlin Hospital. Eleanor tried to reach him by phone; failed; tried again; failed; again; no good. Red tape. Then a letter from him: broken bones, but he would quite recover. Would she visit him? Tender meeting of the betrothed in the East Sector hospital. He would have to stay there some ten days more; could she come again next week? Certainly she could.

During the sweet sorrow of farewell on her second visit, Paul handed her a boxed roll of film and asked her to take it to his friend in West Berlin. As she stepped from the hospital door she was arrested by security police on charges of espionage. She was driven to a safe house, stripped, and searched. The film was developed: pictures of East German military equipment! She was taken to the Soviet headquarters in Karlshorst, where she found Paul also in custody. He was manly about it, concentrating on making them understand that she knew nothing of the contents of the film. After some hours of interrogation they gave her a few compassionate minutes alone with him. Abashed, he confessed that he was working for a Western intelligence service and was now in bad trouble; he only hoped they would let her off lightly.

She was taken back to the safe house, where a Soviet officer who had been put in charge of the case talked earnestly to her, emphasizing the seriousness of her fiancé's crime to which she was accessory. The only hope for him was somehow to expiate the damage done with an equivalent good deed. And she did happen to be in this respect in a fortunate position; didn't there pass through her office in Bonn coded telegrams concerning the U.S. position on Berlin and policy toward the USSR? These were not of the same value as photographs of military equipment, of course, but given good faith on her part one could afford to be generous. The distraught girl eagerly grasped this chance to save her loved one. She signed a statement of obligation to the Soviet intelligence service and was escorted to the West Berlin border.

Flying back to Bonn, however, Eleanor began to shrink from the prospect of stealing secret papers even to save Paul. How could she be sure that they would release him if she did? As soon as she got to the office she told her supervisor the whole story. It didn't take investigators long to find that Paul was

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no American citizen and no Western intelligence agent, but a Soviet one, the lure in an elaborate play to compromise a frail American with good access to communications, and that the Soviet officer who struck the bargain with her was Y. A. Zastrovstev, who two years earlier had been suspected of similar activities as second secretary of the Soviet embassy in Washington and asked to leave the country.

Sports Flyer

On New Year's Day of 1959 a small civilian sports plane in trouble crash-landed in the Kiel Canal. The pilot was seen to reach the bank uninjured, but then dive back into the icy water and retrieve a briefcase from the wreck. He gave his name as Richard Brueggert, of nearby Neumuenster. The German authorities, suspecting a connection between the importance he attached to his briefcase and the fact that during the previous autumn this same plane had been identified making repeated flights over maneuvers being conducted in the area by the West German army, did some investigating and questioning of Herr Brueggert. They got quite a story.

Richard was a native Neumuenster lad. When he turned nineteen, at about the time Von Paulus was reaching the Volga north of Stalingrad and Rommel stood before El Alamein, he was inducted into the Luftwaffe. In time he got himself into the coveted pilot training course, but his ambition to fly real missions was thwarted by the end of the war. Ragged post-war Germany saw him without pilot experience, mostly jobless, and engaged to a girl from Saxony, Erna Hillmann. In 1946, in spite of poor financial prospects, he married Erna, worked a while on a farm there in the east, then took her back to Neumuenster and eked out a living for the next ten years with temporary jobs as joiner and chauffeur. He wanted above all else to fly.

In the summer of 1956, when he had been working for a year as joiner for German Service Organization 520 in Hamburg, Brueggert came across a copy of *Flugsport*, an amateur pilots' magazine published by the East German Sport and Technology Society. He wrote to the Society and arranged to have future issues mailed to him. At about this time he lost his GSO job.

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Early in 1957, through the good offices of the Sport and Technology Society, he got a letter from a fellow aviation enthusiast named Paul Soltau in East Berlin, and they struck up quite a correspondence. In March Soltau invited him, unemployed now for nine months, to come to East Berlin and talk about a job in sports flying. His luck had changed, at last, and in a holiday mood he took off with his wife Erna. Soltau was apparently embarrassed by her presence, but he carried it off well; he took them to Saxony and while she visited her family the two men had their talk.

After satisfying himself that Brueggert was fed up with the freedom of economic and aeronautic opportunity in the Federal Republic, Soltau revealed that he was a military intelligence officer (but not his real name, Major Ernst Beyer) and asked detailed questions about the strength, arms, and personnel of the German Service Organization, and whether it was likely to be integrated into the regular armed forces. He was pleased with the extent of Richard's knowledge. Could he get a copy of the Air Force manual? There would indeed be a "sports flying" job for him, but first he should have training in photographic techniques and could do some practicing with useful ground photography. Here was DM 200 for the GSO report; his pay would be doubled when he got to flying. Brueggert signed a pledge to carry out assignments as agent for the Democratic Republic. His cover name would be "Ruth."

In the following twenty-one months before his crash, "Ruth" furnished ground and aerial photographs of port and shipyard installations in Kiel and Hamburg, of barracks, rifle ranges, ammunition depots, railroad stations, and airfields in Neumuenster, Boostedt, Rendsburg, Schleswig, Flensburg, Leck, and Schwesing, and of highways, bridges, and town and city layouts in the area. He reconnoitered the NATO training grounds at Todendorf to observe remote-controlled flying models being tested there. On the side, he spotted members of the armed forces who might be recruited as agents. Although he usually chartered planes for his air missions, he bought himself a second-hand Auster in England, the one he later crashed. He set up a "detective agency" which conveniently shared

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office space with a photo studio and shop run by his best friend, Peter Wingert, who had been a Luftwaffe photographer.

Although Brueggert had been given two letter-drop addresses by which he could communicate with Major Beyer, his photographic reports of course had to be conveyed in person, and as his activity increased this meant a dangerous amount of travel for him. So he let Erna in on the secret and took her to East Berlin to be signed up, at Fichtrasse 11, as an intelligence courier. She had no particular political convictions and was happy to be able to increase the family income. Between them they made about sixteen trips to Berlin before the crash, carrying the reports in a hollow umbrella handle or in eviscerated oranges, rolls, or cookie packages.

Richard and Erna and their friend Peter Wingert were tried for espionage. Wingert, because the only witness against him, Brueggert, refused to confirm what he had said under interrogation, that Wingert not only knew all about the business but had met with Major Beyer in East Berlin, had prepared reports for him, and had been paid for them, was released for lack of evidence. Erna Brueggert was sentenced to nine months in prison. Richard was convicted, told the investigating judge, "When the Federal Republic falls I personally will pull the rope that hangs you" and was given two and a half years.

Secretary to the Chief

In 1960 it became apparent that the East German intelligence services must have a high-level source in the Federal Republic's Defense Ministry. Investigators found a trail that led to the office of the deputy naval chief, Admiral Wagner, and to his efficient 30-year-old secretary. In October Rosalie Kunze was arrested and confessed.

A Pomeranian girl, Rosalie had been recruited by the East German service in Dresden in 1954 under a threat to expose the illegal abortion she had just undergone. She was taken to East Berlin and given extensive safe-house training in secret writing, radio communications, photography, and other clandestine techniques. In 1955, equipped with a fictitious background legend and falsified documents, she was sent to

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the Federal Republic. By 1956 she had succeeded, as instructed, in getting a job in the Defense Ministry. Here she had access to Secret and NATO Secret material, and after 1958, when she had worked her way up to a position in the top command, she handled Top Secret documents as well.

Through East Berlin cover addresses, dead drops in West Germany, and couriers she kept in contact and arranged regular meetings to pass on orally or in writing the closely guarded secrets of the West and to receive new assignments, submit expense accounts, and take additional training. Sometimes she went in person to East Berlin, sometimes met with another agent in the West, one Horst Friedrich Schoetzki, alias Martin Kiessler, who would then report to East Berlin.

Shortly before her arrest Rosalie had served as secretary to high staff officers participating in the NATO "Flashback" maneuvers at Baumholder. She still had with her the notes she had made on atomic weapons used in the exercises; she had planned to pass them to Schoetzki at a meeting they had scheduled a few days later. Arriving for this meeting Schoetzki was also arrested, and a search of his quarters turned up microdot equipment, undeveloped minox film, concealment devices, and other paraphernalia of espionage. He too confessed, and the information furnished by the pair enabled the authorities to run to earth six other agents of the East German service.

Art Director

On 11 July 1961 the Brazilian police arrested a talented young German immigrant named Joseph Werner Leben who held a well-paid job in a São Paulo firm dominated by anti-Communists and North Americans. In his apartment they found photographic equipment, stationery treated chemically for secret writing, codes and ciphers, and a large amount of correspondence to and from an East Berlin intelligence office. He confessed to have been collecting and transmitting information on anti-Communist activities in São Paulo, the political situation in Brazil and attitudes toward Cuba and other Latin American countries, and North American infiltration of Brazilian industry, as well as to have been making contacts in the North American colony and in the customs

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offices with a view to future requirements. One of his most recent messages had alerted his superiors to a secret meeting of prominent anti-Communists, including the president of the firm he worked for as art director, Vladimir Landzzensky, to be held on 6 July at the Hotel Hampshire in New York.

Leben's career as an agent had got off to a jerky start. He first fell in with officers of the East German service at the 1956 Leipzig fair, but he left for Brazil on his own shortly thereafter without having been approached for recruitment. They kept in touch by mail, however, and soon he was invited back for an expense-free visit, during which he signed up, was advanced some \$1,500, and acquired the cover name "Armador." He went again to Brazil in December 1956 to begin his intelligence activities, but in October 1958 was recalled for further training at Fontanastrasse 17A, so that his real work did not begin until early 1959. In the end, at least, he was considered an agent of considerable importance, getting some of his instructions direct from Gunter Lange, one of the top men at headquarters, and having received for his services more than \$10,000. He was to transfer to the United States when he turned thirty and would no longer be liable to the draft.

Normally his communications were by ostensible love letter first to one Rita Goether and then, with an abrupt switch of affections, to an Ursula Perkel, who was so callous as to marry a man named Wessel while the amorous correspondence was going on. The secret messages were carried in invisible writing or on a microdot under the stamp. He had documentation for two false identities in case he had to make a get-away. If he should go to Berlin, he was to telephone his lady love and say "Armador. Armador. Armador," and hang up. He was to tease her thus twice more, but on the third time listen for instructions for a rendezvous.

While the police were arresting him before breakfast on that July morning, a special-delivery letter came. No microdot, no secret writing; but two words of gibberish were buried in the text, "Placard—Stafet." "Placard" meant to burn all his documents, "Stafet" to disappear. But in East Berlin poor Ursula waited long hours at the telephone in vain.

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Gangster Agent

Herz Liberman began his long and eminent criminal's career as a Warsaw teen-ager; he was arrested there for theft in 1930. At the age of thirty, now a tailor by nominal vocation, the avocational skill he had acquired served him well: while all the rest of his family perished in the Nazi gas chambers he managed to escape from Dachau. Between 1945 and 1948 he served two jail terms for theft in Western Europe. Late in 1948 he went to Berlin, became active in counterfeiting circles, was arrested and jailed in West Berlin. In April 1951 he sawed through his cell bars and escaped to East Berlin, where he still lives.

In East Berlin Liberman established a working arrangement with the East German intelligence service. In return for professional services like kidnapping, jail-springing, and burglary he was granted protection for a big operation in illegal trading. In both fields of endeavor he was aided immeasurably by his old membership in the fraternity of "Die Starken," a loose grouping of international criminals, mostly Polish Jews who had survived the concentration camps. The Berlin chapter, some 60 strong, had ties to a larger one in Frankfurt am Main and others in Munich and elsewhere. Die Starken gradually came to dominate East-West smuggling, specializing at first in luxury goods small enough to be carried across on the Berlin elevated. Through its itinerant members Liberman had access to underworld rings—and often, through some who had gone respectable but retained the old school tie, to business circles—in practically every Western country.

Liberman's black market ring, which controlled the movement of almost all goods within its field and dealt directly with the official East German trading organization, had the following establishments in East Berlin: a main warehouse handling coffee, faked American cigarettes, stockings, faked gold watches, liquor, and possibly narcotics; a warehouse in Lichtenberg mainly for textiles; a warehouse in Weissensee to take care of small shipments of strategic minerals; and an export-import firm on Friedrichstrasse dealing in optical equipment and office machines. From late 1956, however, this empire began to disintegrate under the effects of a police

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roundup of confederates in West Berlin and West Germany, a waning demand for its faked or shoddy goods, and a new squeamishness on the part of East German intelligence about using the violent type of covert service it offered. Most of its members stayed in illegal East-West trade, but they shifted from black-market luxuries to embargoed strategic goods.

The following are some of the services which Liberman is known to have rendered East German, Soviet, or Polish intelligence: two successful jailbreaks from West Berlin; three successful and one attempted kidnapping; two attempted murders; three efforts to penetrate the West Berlin police; purchase of a West Berlin garage to provide cars for agent activities; a series of successful burglaries of the card files of organizations processing Soviet refugees; the recruitment of individuals well placed to procure identity documents, foreign passports, military maps, and U.S. MP uniforms for use in kidnappings; the recruitment of skills in car-stealing, counterfeiting, and smuggling weapons into East Berlin.

A Way with Children

Sybille Wambach was that great rarity, the perfect domestic—personable, industrious, intelligent yet modest, friendly but discreet, and wonderful with children. Her family lived in the East Zone, but she had preferred to stay in the West with her uncle, a professor of philosophy at Tuebingen. Not wishing to become a parasite, however, she had gone to Munich in October 1957 to find a job. She never lacked for work. When one U.S. Air Force family was transferred back home, another would be waiting for her eagerly. Or a Department of the Army civilian, who would marvel at how quiet she kept the kids while he caught up on his office work at home. Between jobs she might make a short visit to her family in the East.

In February 1959, much to the regret of the U.S. community in Munich, she moved to Bonn, where she worked in the homes of U.S. embassy officials, one after another as their tours expired. All were tempted by her offer to come with them back to the States, although they knew they couldn't afford her there.

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In June 1961 her employer took for her a telephoned message that her mother was very ill and she should come home immediately. She left right away, her usual calm competence a bit disturbed. Next day she telephoned to say her mother had had a heart attack but she would be back in a few days. Three days later she called again; she would have to stay a little longer. Then a third postponement, most apologetic. No, they needn't forward her mail; she would be back soon. Yet another call: this a woman's voice asking that Sybille be told she is urgently expected. Expected where? Who's calling, please? Click.

The mail she left might have been forwarded to her at the offices of the East German intelligence service, Hauptverwaltung II (Aufklärung). The same defection therefrom that brought the confusion of Sybille's hasty exit gave us—too late—the information that she had been picked up from an East Zone kindergarten in early 1957, trained as an agent, sent to live with her uncle to get West German documentation, and then loosed against the Americans. The defector didn't know what success she had had in Bonn, but from Munich she had reported on the morale of the U.S. forces, their training exercises, and the combat readiness of the 7th Army. At the time of the 1958 Iraqi coup she had flashed the prized information that U.S. paratroops had been alerted and the 7th Army told to stand by.

The Hustlers

The Hans Kesslers, father and son, of Kesko Limited are West German businessmen with excellent contacts in the munitions and chemical industries and a penchant for supplying strategic materials to the East Bloc. They have been arrested twice, but the evidence has not been firm enough to convict them. In 1953, while drumming up trade in East Berlin, the elder Kessler made a deal with a member of the Polish Trade Delegation—actually a UB (Polish State Security) officer—to provide intelligence information in exchange for business with the Poles. Thereafter, at meetings in East Berlin and Warsaw, they arranged a number of profitable business deals, and Kessler was also paid in cash 10,000 West German marks and another \$1,000 for expenses.

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In 1957 Kessler told his UB friend that he had an American source from whom he could get plans and sample parts of the American bomber "Hustler"; he would want \$100,000 and expenses. He could ship the parts through contacts in Teheran. This was too big a deal for the Poles to handle by themselves, and they called in the Soviet KGB. The Soviets were skeptical, but they agreed to the conditions and took over the case.

The further course of this transaction is shrouded from us in the mystery wrapped in an enigma; but it was presumably consummated. The "American source" would have been John Diess, a German-born Canadian citizen who was arrested in 1958 for shipping from the United States other embargoed equipment to Kesko Limited in Frankfurt. In 1959 there were seen in Kessler's briefcase the complete blueprints of an American warplane, along with data on West German mine detectors. And subsequently the old hustler was told by General Romanov of the Soviet embassy in Vienna, not as privately as they thought, that \$100,000 had been deposited for him in the Paris Banque du Nord.

The Million Dollar Split

Henryk Kowalski had been an officer of the UB counterintelligence department since 1946. One of his early missions had been to organize an escape route from Poland through East Germany to the West, lead out a group of refugees, and offer the facility to Western intelligence, whose subsequent operations along it could then be monitored by the UB. The UB, however, had neglected to coordinate this stratagem with its East German counterpart (a frequent oversight) and Kowalski's entire group was arrested by the East German police. It took a Russian officer and word from Warsaw to get them out of jail and deported back to Poland.

From 1953 to 1957 Kowalski's assignment was that of fence in smuggling operations and other illegal transactions designed to provide funds for UB activities and incidentally to line the pockets of his superior, Lt. Col. Henryk Zmijewski, and other senior officers. He would, for example, make "pleasure tours" of Western Europe, where he would dispose of works of art acquired by black market deals in Poland. In 1957 Zmijewski asked him to set up a store in Gdynia which might be used as a place for meeting foreign seamen of interest to the

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UB and from which the profits might be split between them and the UB man in Gdynia.

In 1958 Kowalski was given the job of striking up an acquaintance with a man in Berlin whom the UB suspected of connections with the French intelligence service. He found not one but two who might have such connections, but the UB's intelligence interest in them was deflected by a business deal which they proposed: could Kowalski buy in Poland a million dollars worth of machine guns, carbines, machine pistols, mortars, and ammunition for shipment through an unnamed buyer in Luxembourg to "an African country?" Zmijewski and his superiors, discussing this proposal with Deputy Premier Jaroszewicz and Foreign Trade Minister Trampeczynski, found that Poland did not have the materiel wanted. But Bulgaria would be able to fill the order, and General Koderko of the Ministry of Foreign Trade suggested that Poland act as middleman, retaining enough control of the transaction to make sure of a healthy commission.

Kowalski remained in Berlin in contact with the buyer's agents, reporting to Warsaw through the UB office. He and Zmijewski agreed that the size of his own commission on the deal should be concealed from their superiors, a small amount being deposited in Warsaw but the bulk of it secreted in the West, where it would be available to the two of them. This plethora of hungry middlemen in the deal, however, and the unwillingness of any of them to undercut his own position by identifying the buyer rapidly created enormous complications in the negotiations, and the buyer eventually gave up this channel for procurement.

The People's Choice

Alfred Frenzel, Socialist deputy in the West German Bundestag since 1953, chairman of its Restitution Committee, member of its Defense Committee, had been born at the turn of the century in what is now Czechoslovakia, and he had once upon an immature and happily forgotten time been a member of the Communist party. In April 1956 officers of the Czech intelligence service got to him. They reminded him where his true national loyalties lay, they talked darkly of how his constituency would react to hearing about his Com-

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munist past, they made him dazzling financial offers. He succumbed.

For more than four years Frenzel was a most important source of information for the Czechs, who shared their harvest with the Poles and Soviets. Meeting with Czech officers in Berlin and elsewhere—his contacts went as high as Bohumil Molnar, first deputy of the foreign intelligence directorate—he reported on the Federal Republic's armed forces and its NATO activities, revealed the deliberations and policy decisions of the Socialist Party leadership, and supplied information to facilitate the recruitment of other high-ranking Germans, especially those who had families or close friends in the East. He was also useful in an active sense, for example to campaign among Socialists and before the public for the demilitarized zone in central Europe proposed by the Polish government. Occasionally he could even help in other operations, as when his Restitution Committee awarded a settlement of 60,000 marks to one Kurt Sitte, who was later arrested in Israel for those same espionage activities for which this was compensation.

Frenzel's work for the adversary, one of the most serious breaches ever made in the security of the Federal Republic, was halted by his arrest in October 1960, and six months later he was sentenced to fifteen years at hard labor.

POSTWAR SOVIET ESPIONAGE A Bibliography

This is a selective bibliography of publications that describe the activities of the Soviet intelligence services since the end of World War II. Some works of broader scope, covering also wartime and prewar operations, have been listed because of the postwar material they contain. Serious studies and official materials have been given preference over sensationalized or undocumented accounts intended for popular consumption.

CONTENTS BY COUNTRY OF OPERATION

General	Great Britain
Australia	Japan
Austria	Poland
Burma	Sweden
Canada	Yugoslavia
Denmark	United States
Germany, West	Index of Cases

GENERAL

1. COOKRIDGE, E. H.
The Net That Covers the World.
New York: Henry Holt and Company, 1955.
A general review of Soviet intelligence activities, including references to the known cases of many Soviet agents in Europe and the western hemisphere.
2. DALLIN, David J.
Soviet Espionage.
New Haven: Yale University Press, 1955.
A comprehensive study of the Soviet intelligence service from the late 1920's on. In addition to Soviet wartime espionage, the nets in Switzerland and the Rote Kapelle in Germany, it treats the Canadian spy case and Soviet postwar espionage in Europe and the United States, giving an account of Soviet agents in the U.S. Government and of atomic espionage.
3. DE PONCINS, Léon
Espions Soviétiques dans le Monde.
Paris: Nouvelles Editions Latines, 1961.
An account of several important Soviet espionage cases, including the Canadian atom spies, Alger Hiss, Fuchs, the Rosenbergs, Burgess and Maclean, Pontecorvo, and Sorge, and of Communist espionage in France.

Soviet Espionage

4. DERIABIN, Peter, and Frank Gibney
The Secret World.
Garden City: Doubleday & Company, Inc., 1959.
This autobiography is chiefly concerned with Deriabin's work in Soviet intelligence, both at its Moscow headquarters and in Vienna. It describes the Soviet intelligence organization and its espionage and terrorist operations. Deriabin defected in 1954. See also his testimony before the Internal Security Subcommittee of the Senate Committee on the Judiciary: *Communist Controls on Religious Activity*, May 5, 1959; and his testimony before the House Committee on Un-American Activities: *The Kremlin's Espionage and Terror Organizations*, March 17, 1959.
5. MENNEVEE, Roger
Les Services Secrets Soviétiques: Evolution et Méthodes d'Action (1917-1957).
Paris: Les Documents Politiques, Diplomatiques et Financiers, 1957.
This volume is a compilation from the monthly issues of *Les Documents Politiques, Diplomatiques et Financiers*, which chronicles disclosures of Soviet espionage activities throughout the world. Later cases are covered in several subsequent issues of the monthly.
6. NOEL-BAKER, Francis
The Spy Web: A Study of Communist Espionage.
London: The Batchworth Press, 1954.
These studies include several Soviet espionage cases—the wartime Sorge case in Japan, the Canadian affair, the Vavoudes group in Greece, and the Andersson case in Sweden.
7. SMITH, Colonel Truman
The Infamous Record of Soviet Espionage.
In: *Reader's Digest*, 77: 36-42, August 1960.
This article gives a short account of several cases of Soviet espionage and other intelligence activity in various parts of the world. Col. Smith has had a long career in U.S. military intelligence service, and his material here is authoritative.
8. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Communist Forgeries. Hearing Before the Subcommittee to Investigate the Administration of the Internal Security Act and other Internal Security Laws. Eighty-seventh Congress, First Session. June 2, 1961.
Washington: United States Government Printing Office, 1961.
Testimony of Richard Helms, Assistant Director, Central Intelligence Agency, concerning the preparation by the Soviet and other Communist intelligence services of fabricated intelligence reports, forgeries, distortions of genuine documents, and false news articles for intelligence and propaganda purposes.

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9. WHITE, John Baker
Pattern for Conquest.
London: Robert Hale Limited, 1956.
A survey of several kinds of non-military warfare carried on by Soviet agents and other Communist instrumentalities since 1945: espionage, subversion, coups d'état, and the infiltration of foreign governments and organizations.
10. WOLIN, Simon, and Robert M. Slusser, editors
The Soviet Secret Police.
New York: Frederick A. Praeger, 1957.
Although this book is primarily a study of the Soviet secret police from its Chekist origins in 1917 to the death of Stalin, it includes a section on postwar Soviet espionage activities in Western Europe.

AUSTRALIA

- Vladimir Petrov was the chief MVD officer in the Soviet Embassy in Australia; his wife, Evdokia, also served in the Embassy as an MVD cipher clerk. Petrov's intelligence work included the recruitment of agent personnel and the organization of intelligence networks. When the Petrovs defected in April 1954, a Royal Commission on Espionage was established to hear testimony from them and others on the activities of Soviet espionage in Australia. The first two entries below report its findings.
11. AUSTRALIA, COMMONWEALTH OF. ROYAL COMMISSION ON ESPIONAGE
Official Transcript of Proceedings taken at Sydney (Canberra and Melbourne).
Sydney: Commonwealth of Australia, 1954-55.
 12. AUSTRALIA, COMMONWEALTH OF. ROYAL COMMISSION ON ESPIONAGE
Report of the Royal Commission on Espionage, 22nd August 1955.
Sydney: Commonwealth of Australia, 1955.
This includes the Commission's *Interim Report* of October 21, 1954.
 13. BIALOGUSKI, Michael
The Case of Colonel Petrov.
New York: McGraw-Hill Book Company, 1955.
The story of the Petrov case as told by Dr. Bialoguski, who assisted in the defection. At points he overplays his own role in the affair.
 14. PETROV, Vladimir and Evdokia
Empire of Fear.
New York: Frederick A. Praeger, 1956.
The Petrovs' own story of their intelligence activities in Australia on behalf of the USSR.

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AUSTRIA

15. ANDERSON, Jack and Fred Blumenthal
Trapped at the Washington Monument.
In: *Parade*, pp. 6-8, January 6, 1957.

This article is the only consolidated public version of the story of two naturalized Americans who became Soviet intelligence agents in Vienna, Kurt Ponger and Otto Verber. Also involved was Yuri Novikov, Second Secretary of the Soviet Embassy in Washington. As a result of their espionage activities, Novikov was declared persona non grata in 1953, Verber was sentenced to 10 years in prison for conspiring to communicate and transmit information to a foreign country, and Ponger was given 15 years for espionage.

BURMA

16. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Soviet Intelligence in Asia. Hearing before the Subcommittee to Investigate the Administration of the Internal Security Act and other Internal Security Laws. Eighty-Sixth Congress, First Session. December 14, 1959.
Washington: United States Government Printing Office, 1959.

Testimony of Aleksandr Yurievich Kaznacheyev, who was a member of the staff of the Soviet Embassy in Burma. In addition to his regular duties, and without the knowledge of his Foreign Office colleagues, Kaznacheyev was coopted by the Soviet intelligence service to perform covert intelligence operations in Burma. His testimony describes Soviet intelligence activities in Burma and several other countries in Asia.

See also his further testimony before the same Subcommittee on January 22, 1960, entitled *Conditions in the Soviet Union*.

CANADA

Igor Gouzenko was a cipher clerk on the staff of the Military Attaché in the Soviet Embassy in Ottawa, Canada. In September 1945 he defected to the Canadian authorities. A Royal Commission established to hear testimony from him and others on Soviet espionage activities in Canada issued the report listed below as item 18. As a result of Gouzenko's defection, 20 persons, including a member of the Canadian Parliament and employees of the Canadian Government, were tried for supplying information to a foreign power during the war and in the immediate postwar period.

17. ATHOLL, Justin
How Stalin Knows: The Story of the Great Atomic Spy Conspiracy. London: Distributed by News of the World, 1951.
An account of Soviet atomic espionage, in particular of the Canadian case and those of Dr. Fuchs and the Rosenbergs.

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18. CANADA. THE ROYAL COMMISSION

The Report of the Royal Commission appointed under Order in Council P.C. 411 of February 5, 1946, to investigate the facts relating to and the circumstances surrounding the communication, by public officials and other persons in positions of trust, of secret and confidential information to agents of a foreign power. June 27, 1946.
Ottawa: Edmond Cloutier, Printer to the King's Most Excellent Majesty, 1946.

Contains also: 1st, 2nd, and 3rd Interim Reports, March 1946.

19. GOUZENKO, Igor
The Iron Curtain.
New York: E. P. Dutton & Co., 1948.

Gouzenko's own story of Soviet intelligence activities in Canada.

20. Gouzenko Talks: Interview with the man who exposed the Soviet spy ring in Canada.
In: *U.S. News & World Report*, 36: 34-45, January 1, 1954.

21. NEWMAN, Bernard
Soviet Atomic Spies.
London: Robert Hale Limited, 1952.

A review of Soviet atomic espionage, including the Canadian case and those of Dr. Klaus Fuchs and the Rosenbergs.

22. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Testimony of Former Russian Code Clerk Relating to the Internal Security of the United States; Questioning on January 4, 1954, in Ottawa, Canada, of Igor Gouzenko, former Code Clerk in the Soviet Embassy at Ottawa. . . .
Washington: United States Government Printing Office, 1955.

23. WHITE, John Baker
The Soviet Spy System.
London: The Falcon Press, Ltd., 1948.

An account of Soviet intelligence activities in Canada based on the facts brought out before the Royal Commission.

DENMARK

24. U.S. JOINT PUBLICATIONS RESEARCH SERVICE
Press Articles on Recent Danish Espionage Case.
New York: U.S. Joint Publications Research Service, April 25, 1960. JPRS 3145.

This pamphlet is a translation of various Danish newspaper articles in November and December, 1959, concerning seven Danes indicted in Denmark for peace-time espionage on behalf of "a foreign intelligence service seeking information primarily of a military nature," particularly concerning NATO installations in Denmark. All the defendants were found guilty.

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GERMANY

25. KHOKHLOV, Nikolai Yevgen'yevich
In the Name of Conscience.
New York: David McKay Company, Inc., 1959.
First published with title: *Pravo na Sovest'*. Frankfurt am Main: Possev Verlag, 1957.
Khokhlov was an MVD staff officer sent from Moscow in January 1954 to assassinate Georgi Okolovich, an official of the NTS, an anti-Soviet Russian émigré organization. Khokhlov apprised Okolovich of his mission and defected in February 1954. This book describes his activities as a Soviet intelligence officer.
26. MVD-MGB Campaign Against Russian Emigrés.
Frankfurt am Main: Possev Publishing House, 1957.
A description of Soviet State Security activities against émigré groups abroad. Specific cases illustrate the Soviet use of agents and informers, agents provocateurs, kidnapping, and assassination as instruments to eliminate anti-Soviet émigrés and cripple their organizations.
27. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Activities of Soviet Secret Service. Hearing before the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws. Eighty-Third Congress, Second Session: May 21, 1954.
Washington: United States Government Printing Office, 1954.
Testimony of Nikolai Yevgen'yevich Khokhlov, former MGB agent.

GREAT BRITAIN

28. BLAKE, George (Case of)
Press articles.
George Blake was a Soviet agent for several years, furnishing the Soviets with secret information while serving in the British intelligence service. He was convicted in 1961 for violation of the Official Secrets Act. Material about this case appeared in the press, both in England and abroad, particularly on May 4, 1961, and immediately thereafter, but also from mid-April on.
29. BULLOCK, John and Henry Miller
Spy Ring: The Full Story of the Naval Secrets Case.
London: Secker & Warburg, 1961.
An account of the Soviet espionage net in England headed by Gordon Lonsdale. See item 33 below.
30. CLARKE, Comer
The War Within.
London: World Distributors, 1961.
Another account of the Soviet espionage net headed by Gordon Lonsdale.

31. MOOREHEAD, Alan

Traitor Klaus Fuchs: He Gave Stalin the A-Bomb.
In: *Saturday Evening Post*, 224:22-23+, May 24, 1952; 32-33+, May 31, 1952; 36-37+, June 7, 1952; 34+, June 14, 1952.

These articles describe the espionage activities of the naturalized British scientist Dr. Klaus Fuchs on behalf of the Soviet intelligence service. Commencing during the war years, Dr. Fuchs transmitted secret details about the atomic bomb to the Soviets. He was arrested and convicted in London in 1950.

32. MOOREHEAD, Alan

The Traitors.
New York: Charles Scribner's Sons, 1952.

This book deals briefly with the Canadian spy case and in considerable detail with the atomic espionage activities of Dr. Klaus Fuchs.

33. PORTLAND NAVAL SECRETS CASE

Press articles.
The case of Soviet espionage in Britain involving Gordon Lonsdale and his accomplices Mr. and Mrs. Peter Kroger, Henry Houghton, and Ethel Elizabeth Gee. These were all indicted and convicted in 1961 under the Official Secrets Act for espionage against the Admiralty's Underwater Weapons Establishment at Portland. Long extracts of the pertinent testimony appear in the London *Daily Telegraph* and *Times* for 8-10 February 1961 (preliminary hearing in Magistrate's Court) and 13-23 March 1961 (trial in Central Criminal Court). Other accounts and feature stories appear elsewhere in the British press for this period.

34. WEST, Rebecca, pseudonym

A Train of Powder.
London: Macmillan & Co., 1955.
In the section of this book entitled *The Better Mousetrap* (pp. 271-332), Miss West describes the case of William M. Marshall, a code clerk in the British Foreign Office who was convicted in 1952 of communicating secret information to Pavel Kuznetsov, Second Secretary of the Soviet Embassy in London. This account was originally serialized in *The New Yorker* under the title *Annals of Treason*, February 14, 21, and 28, 1953.

JAPAN

35. KOKOKU DOSHIKAI (Homeland Comrade Society), Tokyo
Soren-chukyo No Tainichi Kosei:
Akama Ni Odoru Kakukai No Yokyoha Gunsho.

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(Soviet and Chinese Communist Aggression Toward Japan:
The Red Activities Among the Masses).
Tokyo: Seikei Shiryō Tsushinsha, 1959.

Sections of this book outline the nature of Soviet espionage activities in Japan and make some reference to specific cases. Soviet attempts to penetrate the Royal Household and government agencies are also described. The remainder of the book deals with Soviet political action, including economic, cultural, and propaganda activities and work with front organizations.

36. RASTVOROV, Yuri Aleksandrovich
How Red Titans Fought for Supreme Power.
In: *Life*, 37: 18-21+, November 29, 1954.
Red Fraud and Intrigue in the Far East.
In: *Life*, 37: 174-176+, December 6, 1954.
Goodbye to Red Terror.
In: *Life*, 37: 49-50+, December 13, 1954.

Rastvorov, a member of the Soviet intelligence service for over a decade, was in Tokyo at the time of his defection in 1954 under the cover of Second Secretary of the Soviet mission there. These articles discuss not only Soviet espionage in Japan but Soviet intelligence activities over all.

37. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Scope of Soviet Activity in the United States: Hearing before the Subcommittee to Investigate the Administration of the Internal Security Act and other Internal Security Laws . . . Eighty-fourth Congress, Second Session. February 8, 1956. *Part I*.
Washington: United States Government Printing Office, 1956.

Testimony of Yuri Rastvorov. This testimony, dealing in part with the question of Soviet agents in the United States, has more detailed information on Soviet intelligence activities in Japan, where Rastvorov was stationed.

38. WALKER, Gordon
Russia's Busiest Spy Nest.
In: *Collier's* 126: 18-19+, December 2, 1950.
Soviet espionage activity and personalities in Tokyo.

POLAND

39. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Soviet Espionage Through Poland. Hearing before the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws. Eighty-Sixth Congress, Second Session. June 13, 1960.
Washington: United States Government Printing Office, 1960.

Testimony of Colonel Pawel Monat, for nine years a member of the Polish military intelligence service and at one time Polish Military Attaché in Washington. His testimony describes the direct and indirect controls exercised by Soviet intelligence over the

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Polish services, including the assignment of Soviet intelligence officers to key positions therein. The testimony also discloses that copies of all Polish military intelligence reports are sent to the Soviet military intelligence service and that many of these reports are the result of intelligence collection requirements levied by the Soviets on the Polish service.

SWEDEN

40. FALKENSTAM, Curt
Röd Spion: En Skildring av den Farligaste Spionaffär Som Avslöjats i Vårt Land.
Stockholm: Aktiebolaget Epege, 1951.
This is the only full-length published account of the apprehension and trial of Ernst Hilding Andersson, a non-commissioned officer in the Swedish Navy, who for two years collected naval defense information for Soviet intelligence representatives in Stockholm. He was convicted of espionage in 1951.

YUGOSLAVIA

41. YUGOSLAVIA. MINISTRY OF FOREIGN AFFAIRS
White Book on Aggressive Activities by the Governments of the U.S.S.R., Poland, Czechoslovakia, Hungary, Rumania, Bulgaria and Albania towards Yugoslavia.
Beograd: Ministry of Foreign Affairs of the Federal People's Republic of Yugoslavia, 1951.
Contains documentary evidence and testimony on the espionage activities of Soviet agents in Yugoslavia, with Soviet diplomatic officers frequently involved.

UNITED STATES

42. Abel mit der Antenne.
In: *Der Stern*, 10 no. 43: 9-10, 63-73, October 26, 1957.
A general presentation of the case of Colonel Rudolf Abel. See item 45 below.
43. BUSCH, Francis Xavier
Enemies of the State: An Account of the Trials of the Mary Eugenia Surratt Case, the Teapot Dome Cases, the Alphonse Capone Case, the Rosenberg Case.
London: Arco Publications Limited, 1957.

This book contains a short and readable summary of the case of Julius and Ethel Rosenberg and Morton Sobell, who were convicted of conspiracy to commit espionage on behalf of the USSR by passing documents and information regarding the atomic bomb and other defense secrets. The Rosenbergs were executed in 1953 and Sobell was imprisoned.

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44. DAVIDSON, Bill
The Secret: The People Who Stole It From Us.
In: *Look*, Vol. 21, No. 22: 87-105, October 29, 1957.
A review of the Rosenberg case based largely on U.S. Department of Justice records.
45. GIBNEY, Frank
Intimate Portrait of a Russian Master Spy (Colonel Rudolf Abel).
In: *Life*, 43: 122-130, November 11, 1957.
This article sets forth the facts in the case of the Soviet spy Colonel Rudolf Abel, largely as developed at his trial. Colonel Abel was convicted in 1957 for conspiring for almost 10 years to obtain and transmit to the USSR information relating to the national defense of the United States.
46. HOOVER, John Edgar
The Case of the Faceless Spy (Colonel Rudolf Abel).
In: *This Week Magazine*, pp. 9, 11-13, 22-23, October 23, 1960.
The FBI chief's account of the activities and apprehension of Colonel Abel.
47. MORROS, Boris
My Ten Years As A Counterspy.
New York: The Viking Press, 1959.
The author relates his experiences first as an agent of Soviet intelligence and then for 10 years as a double agent for the FBI. In the latter capacity he worked with an espionage net which included Jacob Albam, Jack and Myra Soble, Albert and Martha Dodd Stern, and Jane and George Zlatovski, all of whom were indicted for espionage. Albam and the Sobles pleaded guilty in 1957, the Sterns fled the country, and the Zlatovskis remained abroad.
48. PILAT, Oliver
The Atom Spies
New York: G. P. Putnam's Sons, 1952.
This book describes the activities of Harry Gold, the Rosenbergs, David Greenglass, Dr. Fuchs, and others involved in atomic espionage for the Soviet Union in the United States.
49. U.S. CONGRESS. HOUSE. COMMITTEE ON UN-AMERICAN ACTIVITIES
Chronicle of Treason: Reprint of Series of Articles by Representative Francis E. Walter, Appearing in the *Philadelphia Inquirer*, March 3-9, 1958. Eighty-Fifth Congress, Second Session.
Washington: United States Government Printing Office, 1958.
These articles by the Chairman of the House Committee on Un-American Activities describe Harry Gold's atomic espionage, his relations with Dr. Fuchs, the activities of the Rosenbergs, and the cases of Judith Coplon and Colonel Abel.

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50. U.S. CONGRESS. HOUSE. COMMITTEE ON UN-AMERICAN ACTIVITIES
Patterns of Communist Espionage. Report by the Committee on Un-American Activities, House of Representatives, Eighty-Fifth Congress, Second Session. January 1959.
Washington: United States Government Printing Office, 1959.
This report notes certain Soviet espionage cases overseas and then summarizes several in the United States, including those of Jack Soble and his associates, of Colonel Abel, of Sgt. Rhodes, and of Mark Zborowski. It also describes Soviet attempts to recruit other persons in America as agents and lists Soviet diplomatic personnel involved in espionage in the United States.
51. U.S. CONGRESS. HOUSE. COMMITTEE ON UN-AMERICAN ACTIVITIES
The Shameful Years: Thirty Years of Soviet Espionage in the United States. Report by the Committee on Un-American Activities, U.S. House of Representatives, 1951.
Washington: United States Government Printing Office, 1951.
This report covers the whole range of Soviet espionage activities in the United States up to 1951. In the postwar period it describes the Judith Coplon case and the atomic espionage cases.
52. U.S. CONGRESS. JOINT COMMITTEE ON ATOMIC ENERGY
Soviet Atomic Espionage.
Washington: United States Government Printing Office, 1951.
This is a report on several cases of Soviet atomic espionage, including those of David Greenglass, Harry Gold, Dr. Fuchs, and Allan Nunn May. The revelations of Gold and Greenglass are presented in question-and-answer form from their testimony in the Rosenberg case. Other cases of alleged Soviet atomic espionage are also discussed.
53. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Communist Passport Frauds. A Staff Study Prepared for the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws. Eighty-Fifth Congress, Second Session. July 11, 1958.
Washington: United States Government Printing Office, 1958.
A study of the fraudulent procurement and use of U.S. passports by Communists and Soviet espionage agents.
54. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY
Exposé of Soviet Espionage—May 1960. Prepared by the Federal Bureau of Investigation, United States Department of Justice. Transmitted by Direction of the Attorney General for use of the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws. Eighty-Sixth Congress, Second Session.
Washington: United States Government Printing Office, 1960.

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Soviet Espionage

A general statement of Soviet intelligence activities in the United States, with a description of many specific cases involving both Soviet agents and official Soviet representatives engaged in illegal intelligence activities in this country.

55. U.S. CONGRESS. SENATE. COMMITTEE ON THE JUDICIARY. *Scope of Soviet Activity in the United States*. Hearings before the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws. Eighty-Fourth Congress, Second Session. February 29, 1956, Part 4; March 2, 1956, Part 5. Washington: United States Government Printing Office, 1956.

Testimony of Mark Zborowski, a former Soviet intelligence officer who came to the United States as a refugee in 1941. While admitting to earlier intelligence activities in France, particularly in infiltrating the Trotskyite movement, he denied having done espionage in the United States. In 1958 he was convicted of perjury in denying that he had known Jack Soble, who testified that he had met Zborowski many times and that Zborowski had given him information for transmission to the USSR.

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INTELLIGENCE IN RECENT PUBLIC LITERATURE

NATIONAL CHARACTER IN ACTION. By *Washington Platt*. (New Brunswick, N.J.: Rutgers University Press. 1961. Pp. 250. \$6.)

There are few more enthusiastic devotees of the intelligence calling than Washington Platt. He had a long and varied experience as a practitioner, and since his retirement, a few years back, he has devoted himself to research and writing in the field. The book under review is the second in what promises to be a trilogy. In it he boldly takes on one of the most difficult, abstruse, and elusive subjects in the whole area of the social sciences—the matter of national character—and tries to explain what it is, how you can learn about it, and why, when you have mastered it, you will produce sounder policy papers and intelligence estimates.

I do not feel that General Platt has made much of a contribution to learning nor told the intelligence brotherhood much of anything it did not know before. Indeed, I am puzzled that he should have embarked on so ambitious a project with so little preparation and that, having discovered its dimensions, he should have gone forward with the publication of the book. There must have been a point at which he felt like a man who thought he had boarded the Staten Island ferry and found himself on the way to Japan.

A thesis implicit throughout the book, that we in intelligence have need of its exhortations to study national character, that we are woefully ignorant of what the words stand for, is made quite explicit in the preface—"Our Intelligence Community and our Foreign Service have unnecessarily and dangerously neglected this basic factor"—and in some examples cited to show this neglect:

Our failure to understand national character was strikingly evident in the case of the Castro revolution in Cuba. Equally evident was our failure to accept the fact that revolutionists in Cuba must necessarily be quite different from revolutionists in the United States.

General Platt sets forth to correct this situation by laying out the problem of national character and telling us how we should think about it and what we should read.

Recent Books: "National Character"

Now I do believe that there is a Frenchness about France and a Japaneseness about Japan and that when we do business with the French and Japanese we should bear this in mind. I do believe we are well advised to acknowledge differences between Germans and Mexicans and to take these differences into account in writing intelligence estimates or concocting a policy. I do not, however, feel that there is anything unusual in this attitude among intelligence and Foreign Service officers; I would be hard pressed to identify any authority who has argued otherwise. I do not believe that the United States has dangerously neglected the study of the character of other nations. Moreover, I believe that if we spent a thousand times the present effort in trying to pin down the elusive subtleties of "national character" we would have an intelligence and policy only marginally better than at present. Let me take up these two points in order.

If General Platt had written his book twenty-five years ago, he would have had a far easier time lamenting the provincial attitude of the U.S. government and the unsophisticated character of its intelligence and foreign-policy-making apparatus. With the isolationism prevalent after World War I, without the cosmopolitanism which went with empire, and with one language adequate for practically all of our needs, most of us could and did live in relative innocence of the rest of the world. But with the second war and the responsibilities it brought us, our attitudes towards the foreigner have dramatically changed. In the last twenty years we have pioneered in new methods of teaching foreign languages and have established scores of language schools. We have trained thousands of our military men and civil servants in the world's difficult languages and tens of thousands in others. Programs devoted to studying foreign areas along with the appropriate languages have burgeoned in a hundred or more of our universities, and these have had the support of business, the foundations, and the government. University curricula have broadened to cover hitherto unnoticed parts of the world, and Fulbright and a score of other kinds of fellowships have sent thousands of our citizens abroad for study. The importance of country or regional expertise is implicit in the way in which government organizations carrying the burden of our foreign relations and foreign intelligence are put to-

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gether. I can recall none in which it is not the regional offices that carry the weight of responsibility.

If General Platt had confronted this issue in 1939 he would have had a substantial matter in hand. At present I do not think he has. It is even possible that we have become too much obsessed by the Platt thesis for our own health. Possibly we are drugging ourselves with the notion of "national character" as the key to the behavior of foreign states. I have the feeling that General Platt, particularly in his Section 7, gives evidence of having taken an overdose of this drug.

In this section he goes so far as to write a neat equation for estimates of probable future foreign developments— $H(\text{ard}) F(\text{acts}) \times N(\text{ational}) C(\text{haracter}) \times S(\text{it}) (u\text{ation})$ —The Estimate. Here HF and Sit. seem to be determinable constants and NC, through neglect, the decisive unknown. He comes perilously close to saying that NC *can* be known with the same certitude as HF and Sit., and that once we know it the solution to the equation will derive from simple multiplication. In the first place, however, the HF and Sit. elements do not on most occasions have the quality of determinable constants; often they are murky, indefinite, and imprecise, themselves derived from squashy estimates. In the second place, even if the facts and the situation were "hard," the national character element is far too general a factor in the equation to yield any determinate result.

It is one thing to look back through a thousand years of British or Chinese history and find institutional developments that it seems could not possibly have happened in any other nation. It is one thing to look forward through five or ten decades of probable French or Japanese developments and cite likelihoods based on the nature of the Frenchman or the Japanese. But it is something else to incorporate national character into an estimate of how the UK or France will respond to an American or Soviet policy initiative due to be taken tomorrow. For one thing, if there is in fact a definable Russian, British, and Greek national character, do the Soviet, British, and Greek governments accurately reflect this character? If we knew the Russian character as we know, say, our office phone number, could we predict the Soviet govern-

Recent Books: "National Character"

ment's behavior re Berlin in the week ahead? The principal decision makers of that mechanism may or may not be governed by this character. General Platt is aware of this difficulty and discusses it in his sections on groups and elites, but I do not feel that he has met the issue head on and licked it.

One need not grope for hypothetical cases to make the point. Consider an estimate on the likely course of British decision in the days of the Suez crisis. Here was a question of the probable behavior of the nation we knew best. We had a language and a literature in common, we had studied its history; hundreds of thousands of us had lived in Berlin with the British, had served side by side with them in war and peace; we knew its economic problems and had a feel for its politics. In government-to-government relations there were privileged contacts at ten echelons. Britain was our closest ally. That a British government should land forces in Egypt with at least 75 percent of its citizens desperately opposed and without consulting us was all but unthinkable. Any estimate following General Platt's injunctions would have been quoting odds of ten to one or twenty to one against the landing. The point is that the decision was not that of the British people; it was the Prime Minister's, and at this moment in history Sir Anthony Eden was not behaving according to form.

Perhaps equally dramatic mis-estimates would have been made of the behavior of Hungarians, Poles, and Czechs in that same autumn of 1956 had estimators leaned too heavily on their notions of how the three national characters would move and react. Someone has wittily remarked that in these bleak days the Hungarians behaved like Poles, the Poles like Czechs, and the Czechs like pigs.

If intelligence were asked only to calculate the odds on the outcome of a decade of struggle, it would be well advised to consider a serious use of broad conceptual tools like "national character." The trouble is that our makers of foreign policy and our strategists require much more than this. They need appraisals within short time intervals and narrow subject matter where the long-run factors like national character can and often will be ineffective among the accidentals of the moment.

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A last word about General Platt's reading list, "Publications on Characters of Specific Nations . . ." It is uneven in the extreme. It contains a few classics; it omits many. It contains general historical works as broad, as long, as tedious as Veit Valentin's *The German People, Their History and Civilization from the Holy Roman Empire to the Third Reich*, and books as narrow and as interesting as Laurence Wylie's *Village in the Vaucluse*, which presents the tiny sliver of French national character garnered by a sociologist in a year's sojourn in a French hamlet. It lists books on three Latin American countries, none on the other seventeen. There are nine books on the United States (scarcely an intelligence target for the likes of us) and there are none in any foreign language.

Somewhat the same grab-bag character pervades the author's bibliography proper. For example, Hans Kohn's *Mind of Germany* is duly noted, but none of Kohn's other and better known works; nor is there more than a vestige of the huge general literature which a library's subject catalogue would list under "Nationalism." Here there are two books in foreign languages. For a thorough bibliography on General Platt's subject—one probably issued too recently for him to take advantage of in preparing this book—the enthusiast might consult the 988 items listed by H. C. J. Duijker and N. H. Frijda in *National Character and National Stereotypes* (Amsterdam: North-Holland Publishing Co., 1960).

WARMED-OVER DISHES

BURN AFTER READING. By Ladislav Farago. (New York: Walker & Co. 1961. Pp. 219. \$4.95.)

Designed as the intelligence history of World War II, this new compilation by the author of *War Of Wits* has been favorably reviewed in the public press; but it is a pretty feeble effort to cope with an essentially impossible job. The fragmentary character of what is publicly known about intelligence operations during the war precludes any cohesive history; and Mr. Farago, recounting in detail, even to fictional conversations, some episodes that take his fancy and covering the intervals between them with broad and questionable generalizations—"In the summer of 1940, the Abwehr had reached its peak and was imperceptibly deteriorating; British Intelligence had moved out of its stupor and clumsiness,¹ and had become, virtually overnight, a crucial arm of His Majesty's Government"—doesn't make the best of what material is available.

The author's penchant for dressing up his stories can be illustrated in the emotions he attributes to the Abwehr during the preparations for Operation Sea Lion, the invasion of Britain:

With failure piling upon monumental failure, the Abwehr grew desperate. In panic they combed their files and screened their schools, but all the manhunt produced was a single man . . . willing . . . to go to England.

The British [in a multiple radio deception said to have been carried on successfully for 15 months] put on the air an intricate pattern of fake information, including a few items larded with some truth. The Abwehr swallowed everything gluttonously and rejoiced that the famine had ended.

He credits the abandonment of the Sea Lion plan to this radio deception—

Much of the German High Command's planning for Sea Lion was based on intelligence they received from the Abwehr, which in turn had procured it from British Intelligence. . . . As more and

¹For evidence of its "stupor" he misquotes Churchill, omitting a statement that "I cannot believe that this [lack of foresight in the government] is the fault of the British Secret Service."

more doctored intelligence arrived from England, the size of Britain's defenses appeared increasingly great while Germany's chance for success seemed smaller and smaller.

—and to a rumor spread by British intelligence that the defenders had developed a way to set the sea on fire: "Those who were close to Hitler during those days believe the rumor unnerved him."

Readers moderately well read in intelligence will be nagged by doubts of the trustworthiness of new material they find in the book. The many typographical errors first shake one's confidence, and the author's apparent fondness for the given name Werner, with which he replaces both the Walter of Schellenberg and the Wilhelm of Flicke. Then he mixes up the Service de Renseignements of the French Interior Ministry with the Deuxième Bureau of the General Staff. He pronounces summarily an ex cathedra judgment that "the penetration of Scapa Flow by a U-boat allegedly guided to its target by a spy . . . never really happened," thus favoring parvenu researcher Alexander McKee over Winston Churchill as a source.² He never buttresses his statements with reference to sources. His considerable bibliography in four languages includes good primary sources but also undocumented popular accounts at second hand, like Ronald Seth's.³ Although he devotes his first chapter to an exploit of Alfred Helmut Naujocks, he apparently hadn't seen Naujocks' own memoirs.⁴

The reader who happens to be expert in the history of Czech intelligence will be shocked by Mr. Farago's description of how in 1939 the Germans "seized intact the files of the Czechoslovak General Staff, especially the archives of its Second Section" and how the traitor Emanuel Moravec "led his Nazi friends to the hidden safe in which complete blueprints of the Maginot Line, France's greatest secret, were

²See the review of McKee's *Black Saturday* in Intelligence Articles IV 4, p. A32.

³A recent book of Seth's is reviewed in Intelligence Articles VI 1, p. A21.

⁴As told to Gunter Peis in *The Man Who Started the War* (London, 1960), reviewed in Intelligence Articles V 3, p. A29.

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kept." He has apparently confused Emanuel Moravec, who had no connection with the General Staff, with General Frantisek Moravec, chief of the Second Section, who moreover had safely disposed of the files before the Germans arrived. The Czechs had no blueprints of the Maginot Line in any case.

The last two chapters of the book carry the torch for psychological warfare as the decisive weapon in bringing war to a victorious conclusion. In the final chapter Mr. Farago tells us that he and Captain Zacharias, in spite of obstructionism from the State Department, had persuaded Japan by means of broadcasts to capitulate as early as July 1945 and would have had the papers signed and delivered by 1 September. This successful effort "blew up in the poisonous mushroom of two atomic bombs. . . . To save two weeks, the United States introduced history's most savage weapon into human conflict, and thus endowed war with an unprecedented horror."

The penultimate chapter sets the stage for the Zacharias tragedy by drawing a parallel with Allen Dulles' effort in Switzerland, obstructed this time by the President, during the 1944 plot against Hitler:

Dulles was torn between elation and frustration, between a burning desire to intervene in the *coup* and his order to stay aloof. There he was, with his fingers on the feverish pulse of the German opposition, fully in a position to supply all the outside aid the plotters needed so desperately, and *thereby contribute decisively to the early termination of the war, making the invasion superfluous*. Yet his hands were tied. . . . He had to sit back like a man dying of thirst, separated by an abyss he could not bridge, several feet from a spring of crystal clear water.

It is evident that Mr. Farago's Hungarian passions sometimes lift him quite beyond the drab terrain of history. The serious student of intelligence would be inclined to add to his title a parenthesis used by one Edward Rainbowe on New Year's Day of 1645:

I beseech you, sir, let this be burnt as soon (or before) it be read.*

*Letter to Isaac Appleton. MS in the Bodleian Library at Oxford.

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SOVIET SPY RING. By Arthur Tietjen. (New York: Coward-McCann. 1961. Pp. 190. \$3.95.)

This volume retells the story of the Lonsdale-Kroger espionage case in Great Britain which had been well treated earlier in the year by John Bulloch and Henry Miller.¹ Mr. Tietjen covers much the same ground as they, and it is the opinion of this reviewer that his work is considerably inferior to theirs. He has a tendency to jump back and forth in his narrative that makes it confusing even to a reader familiar with the case, and he makes a number of strange errors of fact, persisting, for instance, in referring to the KGB as the "MVD" and saying that Trotsky was assassinated in 1939 rather than 1940.

The author's prefatory claim to have come across "much unpublished information that has direct bearing on the roots of Western security today" is puzzling. He seems to be referring to his discovery that funds for the spy ring passed through New York banking houses on their way to the Swiss banks where they were deposited. From this "revolting and horrible fact" he concludes that the Kremlin is "at work within our house" and about to "occupy our souls," and he wants us to "do something about it right away." His book is even less successful as an alarum than as a real-life spy story.

DIE PIRATENCHRONIK (Chronicle of Piracy). By Wolfgang Schreyer. (East Berlin: Kongress Verlag. 1961. Pp. 200.)

This book, more carefully prepared and better written than the usual run of Communist propaganda, is an exposé of postwar aerial spying and other illegal overflights perpetrated by the United States. The U.S. "case histories" are set against a background of Nazi air espionage practices which occupies the first third of the volume, and a brief transition pictures the United States as the inheritor of the fascist tradition:

The war had scarcely ended when the anti-Hitler coalition . . . was shattered against the American pretension to world mastery. The American monopoly groups, whose representatives had taken over the leadership after Roosevelt's death, turned U.S. foreign

¹In *Spy Ring* (London, 1961), reviewed in *Intelligence Articles* V 4, p. A41.

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policy toward a new, dangerous course . . . toward the closest cooperation with the same German heavy industry in the interests of which Hitler had unleashed the second world war. The defeated competitor could now become a partner.

Schreyer is not always so heavy-handed, however. Frequently he shapes his propaganda with a defter touch and now and then even manages a more-in-sorrow-than-in-anger tone. The last three paragraphs of the book, an epilogue to the U-2 story which fills more than half the U.S. section, are among the best:

Two Officers

On 1 May 1960 a thirty-year-old lieutenant colonel flew over a strange land at a height of nearly 21 kilometers and at a speed nearly as great as the speed of sound. Unnoticed, he assumed, he photographed a rocket-testing field. From such a field was launched, on 12 April 1961, a twenty-seven-year-old major who soared fifteen times higher. Twenty-five times faster than sound he circled the earth; when he looked down, he viewed continents and oceans in a bluish haze. His spaceship contained no photographic equipment. As we saw, a few editors and militarists celebrated the first flight as a technical accomplishment; that is what the whole world said of the second.

Both flights, each in its own way, shook the earth's peoples. Both pilots had wagered their lives. What moved them to do so? Did they fly on behalf of their governments? Certainly, and thus two social systems suddenly revealed their faces. There were also personal motives. Francis Powers did not want to lose his pay; he hoped to become an independent businessman some day. Yuri Gagarin dared to dream of something different. He was gripped by the great human dream of a thrust into the universe.

Both officers, sons of simple people, belonged to the elite of the flyers of their countries. They were sport-hardened, highly trained men. But their deeds were as different as the spring day and the autumn night. Air spy or world space pioneer—there is no doubt about what a stout-hearted, highly gifted pilot would choose today, if choose he could. And we dare to hope that in this way the flight of Gagarin will help the comrades of Powers. For he brings their commanders closer to the insight that while their weapons are still being forged, the day of peaceful competition has already dawned.

The author has trouble with one of his episodes, that of the C-130 which crashed with a crew of 17 in the Armenian SSR on 2 September 1958. It was this same Wolfgang Schreyer who had produced a story of the crash which, published in 1960 in the East Berlin weekly *Neue Berliner Illustrierte* and

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digested in the Soviet magazine *Ogonek*, said 11 of the crew parachuted to earth and were captured and imprisoned as spies. When the U.S. Ambassador in Moscow thereupon requested clarification in the light of Khrushchev's earlier denial that the Soviets had shot the plane down or knew anything about the eleven missing men, the editor of the East German magazine was summarily dismissed, along with several colleagues, and Schreyer received a rap on the knuckles. His present expurgated version leaves the plane's plunge to earth unexplained, but the shooting down and capture of the American flyers has disappeared.

Schreyer's use of precise statistics, photographs, and a wealth of well-explained technical details and his persistent display of sophistication in intelligence matters all suggest that he had more official help than the usual pre-packaged bundle of newspaper clippings and other aids furnished propagandists. One suspects that this time, perhaps by virtue of his earlier faux pas, he was afforded the collaboration of an adviser from the East German or Soviet security service.

Die Piratenchronik is most likely to be propagandistically effective among the smaller, uncommitted nations. One of its sections carries a chart listing American incursions "into the young, independent countries of the group of anti-imperialistic states in order to carry out the business of the Dulles brothers," in which Southeast Asia, the Near East, and Cuba figure most prominently. The author largely avoids the common Communist error of keying his language and concepts to a Marxian audience. It would not be surprising if one or more translations of the work were forthcoming.

The instruments of U.S. power—chiefly our armed forces, our diplomatic representation, and our intelligence services—are among the main deterrents to Communist domination of the world. They are therefore the principal Communist targets. The Communist ink-bombs do not have to be ingeniously conceived, well-engineered, or even unerringly aimed; they just have to be abundant. And they are. What can we do to counter them?

One course of effective action suggests itself. Schreyer's book and others like it are not the flowering of spontaneous artistry or scholarship that they pretend to be. His fly-leaf

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reads "Kongress-Verlag Berlin"; but if truth serum could be used as a developer for secret writing, we'd find in larger letters, "Made in Moscow." And it is this fact which can be dug out and exposed in all its variants. The Communist authors and the Communist publishing houses are vulnerable to a comprehensive investigation which would reveal their sources of income, the amounts paid, the assignment of themes from higher levels, the Party's later editing of manuscripts, the role of the intelligence services in the planning and timing of propaganda, and all the other links between the controlling political organs and the hired hacks. We can prove that Communist publications are neither objective reports of scientific fact nor independent creations of art, but merely synthetic fabrics woven and cut to order. And by so doing we can strip these products of that aura of veracity—or at least sincerity—with which centuries of truth-seeking have endowed the printed word.

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EVASION AND ESCAPE

IT'S FURTHER VIA GIBRALTAR. By Patrick Gibbs. (London: Faber and Faber. 1961. Pp. 144. 15/—.)

This book makes a modest contribution to escape and evasion lore even though the basic escape route—France to England via Spain and Gibraltar—and mode of operations it describes have been the subject of many books. An RAF squadron leader, the author was shot down in the Pas de Calais area in July 1941; and exactly three months later he was back over the same area flying a new Spitfire from England. What happened between his crash landing and his airborne return makes interesting reading.

A sidelight of some interest from the intelligence viewpoint is Gibbs' account of his brief experience as a stand-in interrogator. While at the British embassy in Madrid awaiting travel clearances he assisted an overworked attaché by conducting the preliminary interrogation of a Dutch refugee who had turned up there seeking transportation to England to join the RAF. After interrogating the man at length he reported him to be patriotic, strongly anti-German, intelligent, and prime raw material for the RAF. He was quite shocked to learn sometime later that more expert interrogators in the United Kingdom had found the "refugee" to be a German spy.

ONE MAN AND HIS DOG. By A. Richardson. (London: Harpur. 1961. Pp. 251. 16/—.)

Jan Bozdech left his native Czechoslovakia at the time of the German takeover before World War II. February 1940 found him in the French air force, flying over the western front. Shot down between the Maginot and Siegfried lines, he and a comrade found in the wreckage of a farmhouse a starving pup and carried it back with them to French positions. An Alsatian, the dog matured and became Bozdech's inseparable companion along a road that led after the fall of France to England and eventual duty with the RAF. The dog was still with him at the war's end and accompanied him to Czechoslovakia. In 1948, as the Communist net closed in on Czechs who had served with the RAF, Bozdech had to flee for his life. He refused to leave his dog behind, a decision which

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may have saved his life. Man and dog escaped and in time reached England, where Bozdech reenlisted in the RAF.

From an intelligence standpoint the significant part of this sometimes moving story is Bozdech's escape from Czechoslovakia and the dog's role in his covert crossing of a heavily guarded frontier. There is a considerable amount of literature on the use of trained dogs in patrol activities aimed at preventing frontier crossings, but little documentation that would establish their perhaps considerable potential in aiding such crossings. Even after allowance is made for literary exaggeration of the dog's role in this escape, the core of residual fact suggests that it was substantial. The crossing was made by three men, one a local guide. Bozdech's dog detected and disarmed a border guard who almost stumbled on him and his companions in dense brush, and it also warned of the presence of patrols which the party would have otherwise encountered. When the three men became separated at night while crossing a stream—they could not call to one another in the frontier area, and the two men unfamiliar with the region faced almost certain capture without their guide—the dog reunited them.

At the time of the border crossing Bozdech and his dog had been together for 8 years. Whether the dog would have been so useful without this background of association with a single master is an unresolved question.

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Guerrilla intelligence, ways to combat it, and organizational roles in counter-guerrilla warfare.

COUNTERINTELLIGENCE IN COUNTER-GUERRILLA OPERATIONS

M. H. Schiattareggia

If one is to become proficient in counter-guerrilla operations,¹ one must prepare by learning everything there is to know about guerrilla operations. It follows that if one is to become knowledgeable in the specialty of counterintelligence in counter-guerrilla operations, one must know the objectives, organizational patterns, and modus operandi of typical guerrilla intelligence. It will be comforting to the counter-guerrilla intelligence officer to know something also of the counterintelligence methods employed by guerrillas, to the extent that they have a methodical counterintelligence.

The Guerrillas' Intelligence

How do guerrilla intelligence needs—their Essential Elements of Information—differ from those of conventional forces? For conventional forces it has long been U.S. Army doctrine that the division commander needs to know how many battalions of infantry, artillery, or armor are on his immediate front, how many are within reinforcing distance, and how long would it take for reinforcements to arrive in supporting positions. He wants also additional order-of-battle information such as the identities of units and commanders. He seeks answers to such questions as whether the enemy is going to attack, where, when, with how many battalions, and with what objectives, whether he will defend a position and in what strength, whether he will withdraw and when and

¹ Note that this article is confined strictly to the counter-guerrilla aspect of the broader concept "counter insurgency" currently prominent in official communications.

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whither. Such EEI stem from the objective of conventional warfare—to impose one's will on the enemy by whatever force is necessary.

This manifestly is not and cannot be the objective of guerrilla warfare. Guerrillas' objectives are to harass, weaken, demoralize, disrupt; they cannot hope to *win* wars against massive conventional forces. Their EEI stem from these objectives. They need to know about movements of small convoys and troop detachments, their timing and their routes. They must know intimately the terrain along such routes to select good points for ambush or attack. They must know the terrain offering approaches to these points and possible routes of withdrawal from them. They have to know how the convoys and detachments are armed and protected.

Moreover, the guerrillas must know in detail the complete layout of installations like fortified villages, supply dumps, and command posts which they are going to attack, their defensive structures and the strength, tactical practices, and weapons of the guards, what booty the installations offer, and approaches and withdrawal routes from them. They need intimate knowledge of rail lines and roads and of bridges and other critical points on them suitable for sabotage or attack from ambush. Their main concern with the kind of intelligence needed by conventional forces is for defensive purposes: they seek information on movements of major enemy forces to be forewarned of encirclements or sweeps of their base or bivouac areas.

What are the sources for these kinds of information and what sort of intelligence organization is formed to procure it? In their early formative periods, at least, most guerrilla bands of the past have had no formal intelligence organization; many of their leaders have not had the sophistication even to harbor a conscious concept of intelligence. The Pathan tribesmen on the Northwest Frontier of old India, whose main sport and livelihood has for centuries been the ambushing of caravans in mountain passes and who make guerrilla-type attacks on their neighbors in the conduct of blood feuds, might be called natural experts at guerrilla warfare. They certainly don't sit down in council to organize intelligence collection forces or process collected information; but you can

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imagine a tribesman skulking high up on a mountainside, camouflaged by natural coloration and his clothes, watching caravan routes below for great distances and then, by runner or signals, passing the word to his fellows that it is time to get into position for attack. Despite Jomo Kenyatta's education in London and Moscow and the sophistication of several other Kikuyu leaders in the Mau Mau guerrilla actions of the early 1950's, one finds little in the writings of British analysts concerning any Mau Mau organization for acquiring intelligence; but you do find reference to the advantage the "gangster" enjoyed in knowing the area better and his "added advantage of good observation points both on the forest fringe and on the moorland areas."²

Regardless of its lack of formal organization, every guerrilla force of any size which enjoys any success has a ready-made intelligence collection agency—the people on the ground. If the guerrilla movement in fact springs from these people, if it represents a popular wave of feeling against the government or occupying power, the people on the ground—the peasant or coolie farmer, the laborer, much of whatever middle classes there are—will feed information to the guerrillas spontaneously. As the guerrilla leader becomes experienced, he will improve on this spontaneous flow by teaching the people accuracy in their reporting and by instructing the most intelligent, trustworthy, and courageous of them in what he particularly needs to know and in how to make observations and report them. He will also augment it with trained patrols and with clandestine agents, the latter particularly for penetrations. He will work to improve the speed, accuracy, and security of the communications by which this information gets to him, whether by runners, signals, or electronic means.

In Communist practices, particularly, if not all the people in the area fully support the guerrilla effort, those who do not will be harassed by pressures and if necessary by terrorist methods, and at the same time indoctrination teams will exercise persuasion on the populace. Ultimately, as the movement grows, the Communist guerrillas will develop rather

²Major P. M. Slane, M. C., *The Royal Inniskilling Fusiliers, "Tactical Problems in Kenya," Army Quarterly*, Vol. 69 (October 1954), pp. 45-52.

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sophisticated intelligence requirements, organization, and production. Intelligence documents captured by the French from the Ho Chi Minh forces before the 1954 Geneva agreement to divide Viet Nam included remarkably accurate order-of-battle studies on the French units and other situation reports, summaries, and estimates of a high caliber.³

The guerrillas' primary source of intelligence is then the people of the area, the sea, as Mao Tse-tung characterized it, in which the guerrilla fish swims. The guerrilla intelligence effort may be anything from a primitive, instinctive activity in the casual hand of the leader to fully organized work under a true intelligence staff section at the main base or redoubt. Collection facilities can run the gamut from the spontaneous reporting of haphazard information to a system of patrols, observation posts, surveillance teams, sentries, clandestine networks, penetration agents, prisoner interrogations, and technical intelligence. Communist-directed guerrillas will tend toward the sophisticated, the more so the longer they operate successfully.⁴

This, then, is the intelligence target, the problem confronting the counterintelligence organization of any counter-guerrilla force. How does that organization go about its task of stopping, disrupting, manipulating, or negating the intelligence operations of the guerrillas?⁵

Keeping the Fish from their Sea

Certainly it appears from this analysis that the greatest single problem is that of stopping the flow of information from the people on the ground to the guerrillas. There is a choice of two approaches to this problem. The first is to move the people from the guerrilla area—particularly the peasant or coolie farmers, but also all the population of small villages—to relocation centers where they have neither access to infor-

³ See G. K. Tanham, *Doctrine and Tactics of Revolutionary Warfare: The Viet Minh in Indochina*, Rand Memorandum 2395, Sept. 20, 1959.

⁴ A survey of source materials on guerrilla intelligence is included as an appendix to this paper.

⁵ Some current areas of confusion in delimiting the task of counter-intelligence with respect to that of positive intelligence and that of counter-insurgent action are discussed in a note appended to this paper.

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mation nor contact with the guerrillas. The second is a massive application of normal police/counterintelligence procedures—detecting and identifying the people that supply information to guerrillas, their guerrilla contacts, and their couriers, courier routes, letter drops, or other means of communication, and then taking either the defensive steps of apprehending, interrogating, and imprisoning these people or the offensive one of turning them around for double agent operations. Outlining these two choices is easy enough, but it must be obvious that carrying either one out is an absolutely staggering job.

The relocation method is not an innovation; it has been demonstrated that it can be effective. The Russians, for example, have proved the harsh effectiveness of mass deportations of population in the Baltic states and elsewhere. In Malaya the British-Malayan Security Forces carried out more humane and limited relocation operations, combining these with other forms of action to cut off the Communist Terrorists from contacts with the people, not only for counterintelligence purposes but to prevent their getting from them food, supplies, and other kinds of support.⁶ The French undertook rather massive relocation efforts in Algeria, where whole new towns, with schools, medical facilities, shops, water supplies, and all requirements for living were created, administered, and guarded by the French Army. At present relocation operations are being carried out in South Viet Nam along the Laotian border.

⁶ *The Conduct of Anti-Terrorist Operations in Malaya*, official manual of the British (later Malayan) forces (3rd edition, 1958, classification "confidential"), chapter III, sections 3 (*Main Tasks of the Security Forces*) and 4 (*The Briggs Plan*). This is beyond question the best counter-guerrilla operations manual extant. It is argued by some students of CGW that the peculiar conditions existing in Malaya—the Chinese "minority" (almost as numerous as the Malaysians) being the element supporting the CT's rather than the whole population, and the organization of civil government, police forces, and military forces being so uniquely British—make it not valid for application elsewhere; but it distills from many years of experience a great amount of practical guidance on modus operandi which is clearly applicable any place in the world where guerrilla movements might develop.

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There will undoubtedly continue to be situations when relocation is an essential step in counter-guerrilla action. Some of its aspects are completely outside the competence of counterintelligence forces—the construction of housing for the people, the provision of food and water, sanitation and medical care, and schools, the mounting of indoctrination programs to change the loyalties of the people, the stationing of guard or combat troops, the training of village self-defense forces. Other aspects, however, are wholly counterintelligence responsibilities.

First is the painstaking process of checking the bona fides of the people moved to the relocation site, determining that they are not guerrilla espionage agents, active members of the Communist Party, or working for any other subversive organization. This entails a requirement basic to all counterintelligence operations—effective records. The vetting and name tracing task is a very large one. To approach it practically, one must begin with personnel who have been given any official position or responsibility, with especial emphasis on the center's security forces—the police and self-defense forces, then the civil officials. When these have been vetted, the job of checking the population at large can be attacked.

Counterintelligence personnel must draft or be consulted in the drafting of plans for control of the population—identity cards, travel permits and controls, curfew, neighborhood or block registration and control systems, the selection and training of personnel for these, etc. The development of an informant net is an essential step in counterintelligence control; it forms part of what Eric Lambert, British MI-6 police assistance staff officer, speaking from the British experience in Malaya and Kenya Colony, calls the "police intelligence net at the village level." Together, the block registration system and the informant network form one of the most effective means of defensive counterintelligence, detecting the presence of subversive or espionage agents and identifying them and their contacts.

In the alternative method used to shut off contact between the guerrillas and the people in the area, the counterintelligence task is probably even more difficult than in relocation. This was the method used by the Filipinos in the Communist-

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controlled area known as "Huklandia," and it worked. Colonel Napoleon Valeriano, the officer of the Philippine Army who was primarily responsible for developing the "Battalion Combat Team" and "Hunter-Killer Team" techniques employed so successfully in destroying the Hukbalahaps on Luzon, describes elements of the counterintelligence aspect of the operation in this way:

Four teams (combined MIS & C Company) with radio sets were organized, consisting of six to eight men, with the ranking NCO in charge. Later six more teams of the same composition were added. Assigned missions were varied, but essentially the teams were required to penetrate the suspect area secretly and report all observations on the inhabitants by radio. Contact frequency was once every other hour on the hour. S-2 rented a house in the town of Pandi and hired a family to occupy the house as cover for MIS operatives. The latter group was assigned to effect surveillance on the municipal executive and the town chief of police, already held suspect by S-2.

Because of the temporary suspension of the writ of habeas corpus in Huklandia since 1950, it was possible for the 7th BCT to detain suspects indefinitely. On the theory that the populace are subjected to deep-covered "terrorism," it was recommended that several individuals be "snatched" and brought to 7th BCT HQ for interrogation, hoping that these individuals, after being convinced of the protective motives of the government under skillful handling, will be made to tell the truth about Pandi. The recommendations were approved and appropriate orders were issued.

The teams were able to snatch no less than 60 individuals from different points of the area without being detected by the inhabitants. Suspicion grew more about hidden power of the Huks in Pandi, as in no single case did the mayor or the chief of police report the disappearances to the PC or to the 7th BCT.

With good treatment and frequent appeals to the detainees (the Secretary of National Defense participating) [ed. note: This was Sr. Magsaysay, later President of the Philippines] to cooperate with the government and promises of monetary rewards, the knowledgeable eventually came up with startling information. However, all detainees agreed on their fear of Huk reprisals. Allegations from detainee-affiants were radioed back to field teams covering Pandi for verification or confirmation. These informations were carefully classified and analyzed and compared with

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past intelligence files as far back as 1948. Out of this painstaking effort, S-2 was able to establish the following intelligence pattern:

(1) Pandi was important to the Huk organizations in Luzon due to its proximity to the city of Manila, the center of underground apparatus of the Communist Party of the country.

(2) Therefore, it was important that Pandi should not catch the attention of the AFP or PC; so as not to be garrisoned by the AFP or PC, the area must be kept a "quiet" sector, prohibiting the staging of raids, ambushes, or any Huk activity that will draw troops.

(3) It was commonly known in the area that Huk troop concentrations are prohibited in the area. The area, as a matter of fact, is supposed to be avoided by traveling units. Foraging will be done through supply agents specifically appointed by the municipal mayor. Direct approach to houses or inhabitants is punishable by death.

(4) Huk wounded or fugitives desirous to seek shelter in Pandi must first get proper permission from their superiors, who in turn will make proper arrangements with Pandi authorities.

(5) Huk couriers traveling to or from Manila receive briefings from Pandi Huk intelligence officers on current situations of their destinations, are given pass words, and exercised on new counter-signs.

(6) Pandi inhabitants that had been judged "reactionary" or recalcitrants are not disciplined within the municipal area, but are by long practice secretly kidnapped and killed outside of Pandi. Several instances were cited where the mayor and the police chief conspired in the kidnap-murder of individuals that were ordered punished by the Huk high command.

(7) During the past years, several PC garrisons were off and on maintained in Pandi that because of their small size and poor security could easily have been wiped out by local Huks. These garrisons were left unmolested to mislead government intelligence appraisals on the area.

(8) Names of individuals were submitted as active Huk agents in Pandi, starting off with the mayor's name, policemen, rich and prosperous businessmen, etc.

With several sworn statements, each statement corroborating with others, criminal actions were instituted against all individuals cited or involved.

The liquidation of the Pandi sanctuary broke the Huk secret refuge area near Manila, which in a large way hamstrung their clandestine activities in the city and their liaison and control

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lines with their active field units in Central Luzon. Travel for Huk couriers and VIP's to and from Manila became more difficult.

This kind of counterintelligence effort resembles in many respects the criminal investigation methods employed by the police against powerful criminal gangs who have the support of large numbers of people, and for this reason and others the police are likely in most countries to be the most effective agency for carrying it out. The method calls for informants in every village, surveillance personnel, patrols disguised as guerrillas, combat squads with great mobility and advanced communications capable of reacting at once to flash reports, skillful interrogators, extensive records carefully built up and cross indexed, and counterintelligence analysts to study the guerrilla intelligence organization, define its modus operandi, and identify its personalities.

Other Counterintelligence Tasks

Aside from its major special problem deriving from support of the guerrillas by people on the ground, counterintelligence has tasks in counter-guerrilla action relating directly to the guerrilla forces and their organic intelligence capabilities which manifest the usual twin aspects, defensive and offensive.

Among the defensive aspects is first the normal job of maintaining the security of the police or military forces engaged in the counter-guerrilla operations. Counterintelligence personnel must conduct training, or must prepare training plans and material and train instructors, to indoctrinate the forces in problems of security. The importance of this responsibility is highlighted in the Malaya manual referred to above. Its chapter XIV, section 5, "Military Security and Counter Intelligence," makes the following observations:

As the MCP [Malayan Communist Party] does not possess the normal organization of a first class enemy, it must exploit every resource of intelligence to redress the balance of inferior force. Thus, in addition to the direct screen of the Min Yuen, the MCP has established a network of agents and informants throughout

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the Federation whose task is to gather information and pass it quickly to the CT [Communist Terrorists].

The G(Int) (b) staffs [counterintelligence staff sections in military headquarters] are responsible for the application of:—

- (a) Preventive measures to deny the CT all opportunity of gaining knowledge of our intentions.
- (b) Detective measures concerned with the investigation of breaches of security or covert activities detrimental to the security of the Armed Forces.

Military Security.—There is clear evidence that:—

- (a) Many successful ambushes against SF [Security Forces] have been the direct result of lack of security.
- (b) CT movement out of an area due to be the scene of impending operations has taken place because of bad security, particularly careless talk.

In operational areas contractors and their employees, who are all vulnerable to CT pressure, quickly become aware of ration strengths, the units engaged, the names and personalities of senior officers and, unless great care is exercised in ordering rations, can forecast with some accuracy future unit changes of locations.

Security is many sided and the CT do not rely on one source only for information. All ranks are prone to careless talk, usually through vanity, thoughtlessness or ignorance. To counter innumerable instances of insecurity of material, loose methods of safeguarding secret papers, inefficient guards, unauthorized entry to WD premises and other breaches of security there is only one remedy: proper security training. The supervision of this training is the task of the Unit Security Officer, assisted by the G(Int) (b) staff, and the security agencies, to ensure that all ranks become security minded.

Counterintelligence.—It is unfortunately only too true of the G(Int) (b) staff and security, as it is with the police and crime, that most of its time is taken up in the investigation of breaches of security that have already occurred.

The G(Int) (b) staff sets up certain standing controls, organizes a system of passes and permits, and arranges with the help of Special Branch for thorough vetting and verification of all employees, but these merely limit the problem. They may make it difficult for an informer or agent to gain access to military establishments or, having got in, to be able to do much harm, but

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they cannot exclude the agent or nullify the work of those already inside.

The object of standing controls is, by a process of elimination, to throw into relief incidents or persons that seem to be suspicious and to make them the subject of investigation.

Properly trained, security minded personnel will not only prevent information from getting to the CT but, in adhering to standing security controls, will be quicker to observe any suspicious departures from them and assist the counterintelligence effort.

Since the foregoing is the only section in this manual devoted to the subject of counterintelligence, its writers evidently considered counterintelligence a purely defensive matter. This would in all probability not have been the case if either the Special Branch of the Malayan CID or MI-6 counterespionage people had written it. The offensive counterintelligence operations which can be employed against guerrillas include penetrations, provocations, double agents, and defections in place—all of the classic devices of counterespionage. Of these, the most effective is undoubtedly penetrations. Even Communist guerrilla forces, who are probably more security-minded than most others, are always under pressure to build up their strength; they always are looking for additional men. It is extremely difficult for guerrillas, with their requirement for the highest degree of mobility, to build up counterintelligence records and maintain them, and they are therefore hampered in making the normal security check on new recruits who show up or are brought in by old members.

Penetrations were used by both the Abwehr and the Gestapo of the Nazi forces in Europe during World War II with varying degrees of success, depending in part on the country where they were employed. Their success was especially great in France against the "Free French" or Gaullist resistance forces, which were colossally lacking in security consciousness, but also against the compartmented sabotage groups organ-

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ized and led by the much better trained and security-conscious officers of the British SOE.⁷

The classical double agent operation would presumably retain in counterintelligence activity against guerrillas all the hazards and problems so well described in a recent article in the *Studies*.⁸ Yet a distinct form of double agent operation seems to have worked very well in counter-guerrilla action in a primitive area like Kenya Colony. What other term than double agent really applies to the astonishing operations car-

⁷One corps of penetration agents introduced into the SOE and other groups was led by a Frenchman, thought to have been an Alsatian, known by the code name of "Grand Clément." Recruited into an early SOE group in France, he was recognized to have qualities of leadership and so was flown to England for training and brought back as an officer in the group. Not long afterward Nazi counter-intelligence forces arrested nearly all members of the group. Grand Clément "escaped" and got into contact with another group. This in turn was soon rolled up, and Grand Clément "escaped" again. After this suspicious recurrence it was impossible for him to operate personally again as a penetrator, but he set up a training school for the Germans in which he developed a whole corps of penetration agents, a fairly large number of whom were successful in getting into Maquis, SOE sabotage, or other resistance groups, with the inevitable results.

After the liberation of Paris, the present writer, then a counter-intelligence officer in the joint U.S.-British-French Special Forces, joined with officers of the SOE Security Section in trying to track down and apprehend Grand Clément, but he was never found. It was never even determined whether he had been a German agent at the time of his first recruitment into SOE—a true *agent provocateur*—or was recruited by the Germans later. Two other Alsations who had followed a pattern much like that of Grand Clément, however, were arrested in Paris after the liberation, given a short, fair trial, and shot. They had been recruited into an SOE sabotage group operating near the Swiss border and had shown such ability that they were flown to England for training and returned to the group as lieutenant and radio operator respectively. During the several months thereafter before the area was liberated, the Abwehr rolled up a number of neighboring groups which, in violation of good compartmentation practice, had had contact with this one, but left it strictly alone. This immunity led to an investigation and the post-liberation arrests. The confessions of the two men established that they had been *agents provocateurs*, but it could not be determined whether they were trainees of Grand Clément's.

⁸F. M. Begoun, "Observations on the Double Agent," *Studies* VI 1, p. 57.

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ried out by Inspector Ian Henderson when he turned the captured Mau Mau around and sent them out to track down their fellows?⁹ The preconditions for these operations seem to have been the primitive minds of the targets, subject to intense superstitions, loyalties which appear strange indeed to the occidental white man, and an operations officer who knew these characteristics and the people so well that he could grasp what went on in their minds. Such preconditions are not generally to be found, to be sure, but there is a large part of one whole black continent, ripe today for Communist exploitation, where they may obtain, and such operations may be desirable among other tribes than the Kikuyu. How many Hendersons do we have?

Military or Civilian Counterintelligence?

What agency should undertake the counterintelligence effort for the counter-guerrilla forces? Every country has some kind of police force, as well as its military forces, in some state of being; and it cannot be doubted that in most countries the police, whatever their type or organization, will be closer to the people, will know local conditions, will more easily be able to organize, normally in fact will already have organized, informant nets, and will therefore prove more efficacious in the collection of counterintelligence information for this type of warfare than agencies of the armed forces would.

The opinion that police will always be superior to armed forces in counter-insurgency operations was recently expressed by Slavko N. Bjelajac, chief of staff to General Mihailovic in Yugoslavia during World War II.¹⁰ They can produce intelligence better than the armed forces, he said, because they get it from the people everywhere; the armed forces cannot get intelligence from the front because there is no front. He referred to the experience in Malaya, where the police were always kept on top in the operations, and the

⁹See Ian Henderson with Philip Goodhart, "The Hunt for Kimathi" (London, 1958), reviewed in *Studies* III 1, p. 137.

¹⁰In a speech before the joint Military Reserve units of CIA. Colonel Bjelajac is now a civilian official in the office of the U.S. Army's Special Warfare Directorate.

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army supported them with strikes against concentrations of the rebels when a concentration could be located. He pointed out the greater flexibility and mobility the police have for instant blows or counterblows against guerrillas and their usually better communications for such actions.

There is much of interest along this line in the Malaya manual previously cited. The opening paragraph on "Own Forces" (Chapter III, Section 1), reads:

The responsibility for conducting the campaign in Malaya rests with the Civil Government. The Police Force is the Government's normal instrument for the maintenance of Civil Authority but, in the current Emergency, the Armed Forces have been called in to support the Civil Power in its task of seeking out and destroying armed Communist terrorism. In addition, a Home Guard has been formed.

The main elements of the operational plan for Malaya, which had been developed by a General Briggs, are discussed as follows:

1. The Briggs Plan, which came into effect on 1st June, 1950, aimed at bringing proper administrative control to a population which had never been controlled before. The main aspects of the Plan were:—
 - (a) The rapid resettlement of squatters under the surveillance of Police and auxiliary police.
 - (b) ...
 - (c) The recruitment and training of CID and Special Branch Police personnel.
 - (d) The Army to provide a minimum framework of troops throughout the country to support the Police, and at the same time to provide a concentration of forces for the clearing of priority areas.
 - (e) The Police and Army to operate in complete accord. To assist in this, joint Police/Army operational control is established at all levels and there is a close integration of Police and Military intelligence.

The chain of command established by the Briggs Plan ensured that "there was always complete integration of Emergency effort," and that the Security Forces "have always been acting in support of the Civil Power."

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The final paragraph on this plan is worth repeating here, for it states objectives which appear likely to be valid in every counter-insurgency situation in which the United States may participate:

The Plan was essentially a thorough but long term proposition and it would be unrealistic to look for speedy and decisive results. It envisaged a logical clearing of the country from South to North, leaving behind a strong police force and civil administration once an area or State had been cleared. It also aimed to isolate the MRLA [the Malayan Races Liberation Army, or Communist guerrilla force] from the rest of the rural population, thus enabling the latter to feel safe to come forward with information, whilst at the same time depriving the MRLA of their means of support and so forcing them into the open where they could better be dealt with by the SF.

The roles of police and military forces as described elsewhere in Chapter III are worth study as a model of the ideal organization wherever counter-insurgency or counter-guerrilla operations have to be carried out. The philosophy on which these roles were based is summed up in the second paragraph of the chapter (XIV) on "Intelligence":

Since there is no state of war in Malaya, the basic responsibility for maintaining law and order is still that of the Police. In the same way the responsibility for producing intelligence still rests with the Special Branch of the Police. In view of the size and importance of the problem, however, a special intelligence organization has been built up.

What the size of the problem required was joint intelligence operations centers manned by Special Branch and military intelligence personnel. One aspect of their division of labor is particularly interesting: "All members of the public who have information to give should be passed on to the Police, who alone will handle agents and informers. On no account will military units run their own agents or informers."

The situation in Malaya, of course, with its almost ideally developed security forces organization, is one which United States forces will rarely if ever find in a country they are invited to assist in a counter-guerrilla effort. It might be well, however, to hold up this kind of organization as the goal toward which to work, not only because the police can normally be expected to do a far better intelligence and counterintelli-

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gence job than the local military forces, but also because when the emergency situation is over the Americans will have left behind the foundations of a better governmental and internal security structure.

It is unlikely that U.S. forces will themselves ever be doing the counter-guerrilla job in any country; their role will be to assist local forces to do it competently. And presumably there will have been no declaration of war. Probably an emergency situation will have been declared, perhaps martial law, but no true belligerent situation as recognized in international law. Under these circumstances it would be desirable, in pursuit of the long-range goal of establishing a sound civil government responsive to the wishes of the governed, to keep the civil authority in control at all times.

There should certainly, in any case, be no contending between different elements of the U.S. contingent sent to support the indigenous forces as to whether the police and civil forces or the military should have primary responsibility for the conduct of the operation. This question should be settled as a matter of national policy before any U.S. elements are engaged, and it should be settled in the way which will lead most surely toward a sound, strong, democratic government when the operation is finished.

APPENDIX: Survey of Sources on Guerrilla Intelligence

It is a puzzling anomaly that one of the poorest sources of information concerning the intelligence methods developed and used by guerrillas is the writings of the great and alleged great guerrilla leaders. Mao Tse-tung's *Yu Chi Chan*,¹ a comprehensive manual on the organization, training, equipment, and tactics of guerrilla forces, makes only one explicit reference even to a need for information about the enemy; at page 80 it assigns the "anti-Japanese self-defense units," among other responsibilities, that of "securing information of the enemy." Intelligence, not to mention counterintelligence, is otherwise completely ignored.

¹ *On Guerrilla Warfare*. Translation and introduction by Brig. Gen. Samuel B. Griffith, USMC, Ret. (Frederick A. Praeger, 1961).

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Ernesto "Che" Guevara, newly touted as a guerrilla authority, does include in his recent book² a section on intelligence, as follows:

"Know yourself and your enemy and you will be able to win a hundred battles." Nothing helps the combat forces more than accurate intelligence. But be sure to sort fact from fiction. As soon as post offices and mail deliveries can be set up within the guerrilla zone, try to get intelligence about the enemy. Use women to infiltrate the enemy camp. Use trained men and women to spread rumors and sow confusion and fear among the enemy.

This paragraph, with its remarkable instruction on the subject of intelligence communications, is the amazing totality of what Guevara has to say on the subject of positive intelligence. In the field of counterintelligence, however, he apparently had some afterthoughts. In Appendix 4, pages 66 to 68, he writes:

Almost all recent popular movements have suffered from inadequate preparation. Frequently, the secret service of the governing rulers learns about planned conspiracies. Absolute secrecy is crucial. The human material must be chosen with care. At times, this selection is easy; at others, extremely difficult. One has to make do with those who are available—exiles and volunteers eager to join in the fight for liberation. There is no adequate investigative apparatus. Yet there is no excuse for intelligence reaching the enemy, even if the guerrilla organization has been infiltrated by spies, for no more than one or two persons should be familiar with preparatory plans. Keep new volunteers away from key places.

Absolutely nobody must learn anything beyond his immediate concern. Never discuss plans with anyone. Check incoming and outgoing mail. Know what contacts each member has. Work and live in teams, never individually. Trust no one beyond the nucleus, especially not women. The enemy will undoubtedly try to use women for espionage. The revolutionary secretly preparing for war must be an ascetic and perfectly disciplined. Anyone who repeatedly defies the orders of his superiors and makes contact with women and other outsiders, however innocuous, must be expelled immediately for violation of revolutionary discipline.

... Of course, there is no reason why you cannot have a nucleus of 500 men, but these 500 must be split up, because (a) so large a group is bound to attract attention, and (b) in case of betrayal, the entire force could be liquidated.

² *Che Guevara on Guerrilla Warfare*. Translation by Major Harris-Clichy Peterson, USMCR (Frederick A. Praeger, 1961).

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The location of headquarters may be revealed to most of the group and serve as the meeting place for the volunteers, but the leaders of the conspiracy should appear there only rarely and no compromising documents are to be kept there. The leaders should stay in dispersed, secret hiding places. Locations of arsenals should not be known to more than one or two persons. Arms are not to be distributed until the operation is ready to start, so as not to endanger those involved and to avoid possible loss of costly equipment.

The military leader of the Viet Minh forces, General Vo Nguyen Giap, has written extensively about guerrilla warfare. His essays, collected in a book published in 1961,³ combine a monotonous reiteration of the theme of close relationship between the people and the Communist armed forces with historical treatises on the liberation of North Viet Nam. There is much repetitive material on the manner in which guerrillas developed and were organized and some discussion of guerrilla tactics, but nothing whatever on the part played by intelligence.

General Vo's forces, however, as they have developed into a conventional army, have not so neglected their intelligence needs. The following passage from one of their training documents begins to reflect the military intelligence interests of conventional forces but applies also to guerrilla operations:

Military Intelligence

1. Individuals selected for service as intelligence agents must be active, courageous, perspicacious, realistic and calm in the face of danger.

2. Intelligence targets: Before mounting any attack, you must learn exactly the number of enemy troops and their armament, as our own forces must be at least equal. Learn all you can about the commander of the enemy troops. You should also study the morale of the enemy soldiers, the location of their strong points, such as blockhouses and heavy weapons emplacements, and how many men there are in a squad, a section or a company; identify enemy units by number or name. Find out the equipment of each unit, the firepower of which it is capable and the political and military training received by the enemy troops.

3. The direct and indirect methods of obtaining intelligence: The direct method is to use your own personnel and to send them out as agents. When you send agents into villages or cities, they

³General Vo Nguyen Giap, *People's War, People's Army* (Foreign Languages Publishing House, Hanoi, 1961).

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must adopt a cover such as that of a peasant, a fisherman or a coolie. When you send your agents into the countryside, a special cover is not needed, but your men must be able to hide in the forest and must take care to stay away from well-known places, such as water holes or springs, where the enemy will be alert for them. Agents in the countryside must be careful to leave no trails or other traces of their presence.

The indirect method is to recruit your agents from among the populace. You should study the class structure of the people, the youth particularly, and the organization of the enemy's informer nets. You should choose your agents from the groups thus studied, train them, and put them to work. Tell each one that he must submit reports at fixed intervals, and arrange for them to contact your own men using a system of signals.

4. Intelligence reporting: In obtaining a report from your agents on an enemy base, be sure that the following points are covered:

- a. The location of the base and the name of the commander.
- b. The positions of machine guns, blockhouses, trenches and all other strong or weak places in the base.
- c. The relationship between the enemy soldiers and the civilian population at that base.
- d. Communication facilities. Do they have radios or telephones?
- e. The best routes of approach to or retreat from the base.

Other sections of the Viet Minh document also contain instruction in intelligence aspects of operations:

Ambushes

Before mounting an ambush operation, you must thoroughly study your agents' reports on the situation among the people in the area. Especially study the routes by which and the hours at which enemy troops move through the area. How large are these enemy forces; how fast do they move; what weapons do they carry? Do they have machine guns? In obtaining this information, it is essential that the enemy be unaware of our interest. Only the commander and his agents should know that these things are being studied.

The discussion of ambushes which follows includes many items of intelligence import and puts emphasis on the effect of intelligence on plans and tactics. The same is true of the sections entitled "Raids on Enemy Bases," "General Operating Principles," and "Establishing Your Base." In the last named, an indication is given of a somewhat more sophisticated understanding of the problem of communication with intelligence sources than that displayed by Sr. Guevara: "... or-

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ganize your intelligence nets in the area, especially arranging for communications between your agents and yourself." The document concludes on a realistically grim note: "Intelligence agents and senior officers must study judo and all methods of hand-to-hand combat to assist them in avoiding capture. They must plan to take the most extreme measures to avoid capture. If capture seems inevitable, they should plan to die first."

Turning to non-Communist sources, we find a large number of good books written by officers who had experience in guerrilla operations during World War II. From these some kernels of wisdom can be extracted with effort, but they suffer as analytical or training texts because they were not intended for such purposes, being presented simply as exciting yarns for public consumption.

One of the few books making a deliberate attempt to bring together historical examples of guerrilla activities and to extract from them sound principles is a fairly recent one from a British source, *Guerrilla Warfare*, by C. N. M. Blair, an MI-6 officer.⁴ Chapter 7 of this book, "Summary of Guerrilla Warfare" consolidates the principles distilled from a century and a half of history. Its section on Intelligence begins on page 187:

Not only to give timely information of enemy activity against them, but also for the success of their own operations against the enemy, one of the first essentials for any guerrilla force is to establish an efficient intelligence system. Until the movement has developed into a large and widespread guerrilla organization their main need will be tactical intelligence on such matters as enemy movements, concentrations and intentions, with—from the counterintelligence aspect—warning of enemy attempts to penetrate the guerrillas' own organization. To satisfy these requirements, guerrillas must have their own tactical intelligence service but—like the occupying power—they will also have to rely largely on the local populace, who in turn will have to penetrate the enemy's security services to obtain the necessary information.

Conversely, if the enemy are unable to obtain intelligence about the guerrillas through the local population, they are themselves very greatly handicapped in their counter-resistance activities. It is, therefore, extremely important that the local population are

⁴ Published by British Ministry of Defence (London, 1957), classified British Restricted (U.S. Confidential).

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in active sympathy with the guerrillas, and it is interesting to note that in every successful campaign reviewed in this book this local support has been forthcoming.

Later, as the guerrilla force expands, it will require strategic intelligence not only for its operations and own security but also as a basis for internal propaganda. This type of information may be provided through national guerrilla or clandestine sources (as happened in the case of the Yugoslavs receiving details of the plans for the German Fourth Offensive) but is more likely to have to come through Allied channels.

Communications and control

One of the difficulties in the past has been to disseminate this intelligence, when received, for communications within guerrilla forces have always been elementary and slow, and as late as the end of World War II still relied to a very great extent on couriers and runners . . .

It seems noteworthy that even this more sophisticated effort to identify principles does not reach to concrete particulars on subjects like means of collecting information (except to stress reliance on the population), means of communicating collected information to guerrilla headquarters or intelligence sections, and the system for intelligence processing within the headquarters.

Brig. General Samuel B. Griffith, in his introduction to the translation of Mao Tse-tung, covers the subject somewhat more completely, both for positive intelligence and for counterintelligence:

Intelligence is the decisive factor in planning guerrilla operations. Where is the enemy? In what strength? What does he propose to do? What is the state of his equipment, his supply, his morale? Are his leaders intelligent, bold, and imaginative, or stupid and impetuous? Are his troops tough, efficient, and well disciplined, or poorly trained and soft? Guerrillas expect the members of their intelligence service to provide the answers to these and dozens more detailed questions.

Guerrilla intelligence nets are tightly organized and pervasive. In a guerrilla area, every person without exception must be considered an agent—old men and women, boys driving ox carts, girls tending goats, farm laborers, storekeepers, school teachers, priests, boatmen, scavengers. The local cadres "put the heat" on everyone, without regard to age or sex, to produce all conceivable information. And produce it they do.

As a corollary, guerrillas deny all information of themselves to their enemy, who is enveloped in an impenetrable fog. Total in-

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ability to get information was a constant complaint of the Nationalists during the first four Suppression Campaigns, as it was later of the Japanese in China and of the French in both Indochina and Algeria. This is a characteristic feature of all guerrilla wars. The enemy stands as on a lighted stage; from the darkness around him thousands of unseen eyes intently study his every move, his every gesture. When he strikes out, he hits the air; his antagonists are insubstantial, as intangible as fleeting shadows in the moonlight.

Because of superior information, guerrillas always engage under conditions of their own choosing; because of superior knowledge of terrain, they are able to use it to their advantage and the enemy's discomfiture . . .

Within U.S. Government agencies there have been recent attempts to build up a body of doctrine on guerrilla forces, including their intelligence. In an early 1962 draft entitled "An Approach to Counter guerrilla Warfare" (Confidential) prepared at the U.S. Army Intelligence Center, Fort Holabird, Maryland, is this brief treatment:

A second requirement for successful guerrilla operations is intelligence. Knowledge of the enemy is the key to guerrilla success. The guerrilla leader cannot take the enemy by surprise unless he knows where the enemy is to be at a given time and in what strength. In addition to a civilian clandestine net, a guerrilla organization must have a small group of men trained in clandestine reconnaissance who can move in enemy territory, collect the required information, and return safely to report.

The Department of the Army Field Manual 31-21, "Guerrilla Warfare and Special Forces Operations" (September 1961) is authoritative with respect to the intelligence needs of the U.S. Army Special Forces, the units designed to create guerrillas. It covers the EEI for a Special Force team before it is launched into an area to organize guerrillas and also has a good list of EEI within the guerrilla area after arrival of the team. The reader is referred to Chapter 5, "Theater Support," Section II, "Intelligence," and Chapter 7, "Organization and Development of the Area Command," Section IV, "Intelligence in Guerrilla Warfare Operational Areas." The manual falls far short, however, with respect to instruction in the organization of collection means and in the modus operandi, organization, and operation of intelligence production facilities at guerrilla bases or headquarters. It also dis-

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tinguishes poorly between positive and counterintelligence matters.

The most complete and probably the soundest analysis of guerrilla warfare in general and its intelligence and counterintelligence aspects in particular which the writer has been able to find is the *Guide to Guerrilla Warfare* published by the Operations School of CIA's Office of Training under date of September 1961 (Confidential). Following up a short paragraph at page 3 on the "Role of Intelligence," a comprehensive and detailed discussion of intelligence matters is contained in a section beginning on page 28 covering "General Reconnaissance," "Operational Reconnaissance" (especially valuable), "Sources of Information Which Supplement Physical Reconnaissance"—enemy personnel, friendly and neutral persons in the area, enemy documents, enemy materiel, maps, weather forecasts, enemy radio broadcasts, and aerial photographs—and finally "Espionage." A whole chapter beginning on page 49 is devoted to the subject of "Security," the first two and a half pages of which are really concerned with the defensive aspects of counterintelligence.

NOTE: The Counterintelligence Function and Its Limitations

One area of semantic confusion with possible practical consequences derives from the definition of counterintelligence which, approved officially by the National Security Council and incorporated into NSCID 5, makes it include countersubversion as well as counterespionage and countersabotage. Many people in recent times, including journalists and even high government officials, have referred to guerrilla warfare as the equivalent of subversion. It would be unfortunate if it should therefore be concluded that counterintelligence personnel have the sole or even the major role in counter-guerrilla action; an instant's reflection should make clear how much this is beyond their capabilities.

On the other hand, it is particularly hard in counter-guerrilla operations to distinguish between what is properly positive intelligence and what is counterintelligence. Thus a U.S. Army officer writing about counter-guerrilla operations

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in South Korea,⁵ having emphasized as items of positive intelligence the need for complete order-of-battle information on each unit, to include each member of each unit, continued:

Personality files should include all local connections; frequently a mother can persuade her son to surrender, or a guerrilla leader can be captured while visiting his wife or girl friend. Special efforts must be made to kill or capture guerrilla leaders and seize their communications equipment. Aerial reconnaissance by trained units should also be employed.

This statement typifies the loose thinking in regard to intelligence and counterintelligence which pervades most writings about counter-guerrilla warfare. From a semantics standpoint the order-of-battle information, which in conventional warfare would be positive intelligence, must with respect to guerrilla activity, if that is the same as subversion, be counterintelligence. But this sophistry aside, the task of getting a mother to persuade a son to surrender, or of seizing communications equipment, or of getting at a guerrilla leader through his girl friend, is not positive intelligence but something that requires professional counterintelligence know-how.

The point to be emphasized is that, while it is manifestly impossible for counterintelligence forces to carry by themselves the whole responsibility for counter-guerrilla operations, their role in these operations is a critical one on which the success of the enterprise can very well hang. If anyone has any doubt about this statement, let him read Ian Henderson's fascinating book, cited above, about the final tracking down of the most dangerous of all the Mau Mau guerrilla-terrorists, Kimathi, and try to imagine military positive intelligence personnel or even skilled clandestine espionage people not trained in counterintelligence or police-type work accomplishing what this Special Branch Inspector did.

⁵Lt. Col. John E. Beebe, Jr., U.S. Inf., "Beating the Guerrilla," *Military Review*, December 1955 (publication of the Command and General Staff College, Ft. Leavenworth, Kansas).

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A submarine escape procedure applied to clandestine penetration.

A TECHNIQUE FOR COASTAL INFILTRATION

John A. Hurley

The various means of agent infiltration into a target area—overland travel, parachuting from or landing in aircraft, padding a small boat or kayak, swimming from a submarine—all have their disadvantages. Controls on overland travel usually render it more difficult than entry by air or water. The use of an airplane either for parachuting or for landing, however, is often contraindicated by the likelihood of detection and the difficulty of making an accurate blind drop or landing. On the coast, radar and sound detection networks make the use of a trawler, MTB, or surfaced submarine dangerous not only for the agent but for his transporters. The hulk of a surfaced submarine makes a substantial radar return. In-shore surfacing on a hostile coast, moreover, faces the hazards of mine fields, nets, and chance encounters with naval or commercial small craft.

Buoyant Ascent

One technique which circumvents some of these difficulties is that of buoyant ascent from a submerged submarine, wherein the agent makes his exit from the submarine's escape chamber without any kind of breathing apparatus and is carried to the surface at a rate of 375 feet per minute by a "Mae West" inflatable life jacket. This method is conditioned by the contraction of gases under pressure in accordance with Boyle's law—air breathed under pressure at a mere 33 feet down will double in volume at the surface—and the consequent danger of lethal aeroembolism upon ascent. The agent must therefore exhale continuously on his way up.

The procedure is otherwise a simple one. The agent enters the escape chamber, and while its pressure is being equalized by incoming air and water to that of the surrounding water, he breathes the increasingly compressed air. During this time the life jacket is also inflated, either orally or from a

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Buoyant Ascent

pressure outlet. When the pressure has been equalized, the hatch is opened and he climbs out. He looks to the surface and extends his arm to maintain his posture, and he exhales vigorously during the ascent. Air expansion in the life jacket is taken care of by a bleeder valve which allows the excess pressure to escape into the water. Once on the surface, the jacket can be used to buoy the agent and his gear. Additional equipment—a dinghy, for example—can be carried up on separate floats with connecting lines to facilitate its recovery on the surface.

If it is inadvisable for the agent to show himself on the surface near the coast, swimming or in a dinghy, he can be equipped with the self-contained underwater breathing apparatus, Scuba, to enable him to stay under. For use near the surface there is even a closed-circuit Scuba which makes no exhaust noise and leaves no telltale bubbles (but carries a hazard of oxygen poisoning when used at depths greater than 33 feet).

The exfiltration of an agent can be accomplished by reversing the process. If he is equipped with Scuba, the re-entry into the submarine's escape chamber presents no difficulty. For a free swimmer it might be quite a feat, but Scuba divers from the sub could help him. Emergency contact with the submarine could be made by a Scuba-equipped agent by swimming down and banging on the hull, and without Scuba, in extremity, by dropping very small underwater signal charges. If a number of agents were to be evacuated, it might be best, particularly if they lacked Scuba, for the sub to use its periscope to snag and tow them on a surface line to a point where it could surface or an amphibian could land.

Training for Escape

The buoyant ascent technique has been developed as a means of escape from a disabled submarine.¹ The earliest escape devices were re-breathers of various kinds—the famed U.S. Momsen Lung, the German Draeger, the British BSEA. The United States, in particular, also set great store by the rescue bell, a pressure chamber traveling on a cable that

¹ The fascinating history of submarine escape is comprehensively presented by Commander W. O. Shelford in *Subsunk* (London, 1960).

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Buoyant Ascent

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would lock onto a disabled sub, receive its crew, and transport them to the rescue vessel.

The pattern of World War II's successful submarine escapes, few as they were, favored free ascent, a procedure like buoyant ascent but without a life jacket to speed the surfacing. Its chief disadvantage is the difficulty of correlating the rate of ascent with the rate of exhalation. Too much exhalation could result in drowning, too little in aeroembolism. The correlating maxim "No faster than your smallest bubble" cannot always be followed under stress or in murky water. A free swimmer at depth might also not head straight for the surface.

In 1956, therefore, buoyant ascent became the standard submarine escape method of the United States Navy. Recruits are trained (at New London) and personnel requalified (at New London or Pearl Harbor) by practical exercises in a 118-foot escape tower. Before being put through these runs in the tank, they are tested in a pressure chamber to make sure that they can adjust to the equivalent of 118 feet of depth (50 pounds per square inch, as opposed to 14.7 at sea level). Then there are several hours of class-room and mock-up work before the trainees are taken to the top of the tank, where they begin with shallow ascents to practice the technique.

Finally they are tested in ascents from the 50-foot depth. With an instructor, about ten of them enter an "escape" chamber at that depth. The instructor equalizes the pressure with that in the tank by flooding and admitting air, and the occupants "equalize" as the pressure builds up. Then the hatch swings open, and each trainee in turn fills his life jacket, breathes deeply, and steps out into the tank. Scuba divers watch his bubble stream to determine—as a safety measure and for purposes of evaluation—whether he is exhaling properly. Two successful runs are required for qualification.²

² A new device for buoyant ascent from greater depths has been developed and tested by Lt. Harris Steinke and his staff at the escape tower. It features a hood attached to the top of the life jacket which captures air vented from the jacket under decreasing pressure so that the escapee can breathe during a long ascent. The Steinke hood has been tested in trial runs from a bottomed submarine at 318 feet off the Dry Tortugas.

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Buoyant Ascent

The psychological assurance and real value gained from mastery of the buoyant ascent technique are out of all proportion to the one and a half days spent in training for submarine escape, and it should be an equally good bargain in its promising applications to clandestine operations.

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*Parallel dissatisfactions rankle
in agents on opposite sides of
the globe.*

A MIRROR FOR AGENT HANDLERS

Kermit B. Teichholtz

It is a rare thing to get from an agent, especially in writing, his frank and unflattering opinion of his superior and his methods of handling problems and people. It should be of value to a case officer, however, to be aware of what his agents think of him; even if their criticism is unjustified or misdirected or their views myopic and confused, it is of importance for the handling problem that they hold these views. A full assessment of the agent must take into account his personal attitudes toward the case officer and his mental reactions to the officer's instructions and demands.

There are presented in parallel on the following pages extracts from two such written opinions obtained during the early fifties, one from an agent in Germany and the other from one in Korea, wherein the criticism does *not* appear to be altogether unjustified. While they contain hints of self-interest and some one-sided views, the remarkable similarity on a number of subjects displayed by two commentaries of such widely separated geographic and ethnic origin reinforces their validity and makes them worthy of some study. Both agents said that after much hesitation they finally succeeded in "unloading their minds in complete frankness," as indeed they apparently did.

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Mirror for Handlers

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Trust

From Germany

We have not found common ground on the point of trust. This has been the most grievous side during the past ten years of our collaboration. Your basis for collaboration is this: we Americans have the money and we pay you, you do not have a completely dumb head; therefore, give us the information we need. The human aspect, or all that we can call the spiritual elements of our collaboration, automatically came under the heading of a second, if not a third, plan. I do not wish to say that there was no trust from the side of my superiors; perhaps there was. However, I have been convinced the whole time that it did not exist. . . . If the lack of confidence came because of disbelief in me, then something should be done about it. It is most important that I should be assured that this is done for this or that reason and the affair should not be left unclarified.

With few exceptions, none of my case officers (over one dozen of them) did anything to erase this distrust between one person and another, especially in my case, an intelligence agent. This would have been achieved in a diverse number of ways, e.g., closer fellowship, discussions, etc. . . . I feel the need of some comradeship and trusting friends, to talk things over with them, to learn about their activities, their joys and sorrows.

From Korea

I know that in this business you have to suspect practically everybody you are dealing with, often including yourself. And yet, I believe it is a very poor policy to let your suspicion be known to the person involved, especially in handling the sensitive agent. When you reveal your suspicion, if it is unfounded, you lose your good friends. When you reveal a well-founded suspicion, you give premature warning and often lose your enemy uncaught. In either case you lose more than you can possibly gain.

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Mirror for Handlers

The Polygraph

From Germany

I believe the voluntary aspect of the polygraph is lost when refusal is tantamount to a person's automatically falling under suspicion. Despite the fears that some of his personal secrets may be revealed, the agent accepts the treatment because he does not wish to fall under suspicion. . . . The application of the machine predisposes the individual to think that his superiors distrust him. The impression is that the superiors can find the truth only with this aid since all other methods have been unsuccessful. Also, the questions asked at times lower a person's dignity. When the self-respect is disturbed the individual feels angry with those who enforce this tactic.

I have undergone the test twice. In the first instance it made me unhappy only to a minimum degree. My case officer explained the purpose and introduced me to a very sympathetic man who, in a private discussion, gave me further explanations. No one was present with whom I worked until that time. . . . However, on the second occasion the test came as a surprise to me on a day when I was quite unprepared from the standpoint of my morale. Then, to my astonishment, it was given in the presence of the case officer with whom I worked for the past year. My feelings were aggravated further when the case officer began to ask polygraph questions. The method of investigation not only aroused my anger, but a moral depression and disrespect for the officer. It was an error from the psychological standpoint: It tore away from us all associative contacts that we had built through a period of working together. The polygraph investigation should tend to strengthen the relationship between the case officer and the agent, not destroy it because of imprudent tactics.

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From Korea

I have often wondered whether we are gaining more than losing by the use of the polygraph. I have worked very closely with the system for several years, witnessing, I am sure, more than two hundred tests with the scientific device. Yet I do not recall any one case in which the operator really thought he cracked open a serious case of enemy infiltration or collaboration with the enemy. On the other hand, I can recall numerous cases in which the person tested openly expressed his displeasure at being unjustly suspected. The operator's explanation that the test was another "routine security measure" and that its administration did not mean the person was under any specific suspicion did not do much good in most cases. I believe the system would do more good if it were used as an aid in interrogation rather than using it too frequently on too many persons as a means of a "routine security precaution."

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Mirror for Handlers

Clandestine Practices

From Germany

Clandestinity of our collaboration is overdone in some forms. . . . During the course of my collaboration with the Americans, I can say that I cannot identify by name any of the persons with whom I have worked. I can supply only the pseudonyms, and then only the first names, "Bob," "Steve," "John," or "Mike." I cannot identify the organization that employs me, much less the location of its offices.

If conspiracy is carried out so rigorously for practical security reasons, then everything is in order. However, if it is influenced for reasons of disbelief, then this is a negative factor in our collaboration and something should be done about it. I should be assured that the clandestinity is adhered to for this or that reason, not because of me; the affair should not be left unclarified.

Mirror for Handlers

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From Korea

I believe that a good working relationship with the local government has not been possible because of the somewhat over-emphasized clandestinity on the part of the Americans. It would have been much easier and more fruitful in the long run if the local government had been approached with a warmer hand, even if it had meant a little risk from the standpoint of security. Of course it would have been a completely different story if the entire operation had been covert or underground in nature, as it would have to be in enemy territory. But how could you possibly hope to get away with disregarding the feelings of the local government in a supposedly friendly and independent nation when you were using half of the good buildings available and a large number of indigenous personnel?

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Mirror for Handlers

Mirror for Handlers

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Motivation

From Germany

The Germans [his previous employers] understood human relationships and moral perceptions of the individual and were able to strengthen us and never permitted us to believe that we were ordinary, paid, untrusted agents. They always told us: a paid agent will work for an intelligence service until the other side pays him more and gives him the possibility of living better. However, intelligence work uses ideologically motivated people who see a living value in their effort. If a person does not have moral values, he cannot participate in intelligence. Money is the means to an end, not the end itself. The Germans taught us not to place value in money. And that was good.

The human aspects cannot be fulfilled with material rewards. When one of my American case officers brought me ten cartons of cigarets, he felt it proper to say, "I give you more cigarets this time because you gave us more information this time." The whole transaction became a business deal, not a matter of human relations. Because I gave more information than was usual, a case officer gave me a CARE package, perhaps worth about \$10. The case officer did not place the value of information in the moral category, but automatically placed me in the category of a paid low-level agent. I fought this degradation of the human individual with all the force which I could muster, degradation from the state of a human to that of a paid spitzel.

From Korea

Regardless of what I may say here, you do not have to remind me of who I am and what I am because I know very well about my own past background, and I am fully aware of my present status as well. Human relations should receive a greater emphasis in dealing with Korean agents than any search for their proper motivation. The word motivation is beautiful when it means something, but it is so very hollow when used by the wrong persons at wrong times and in wrong places.

True, it is more difficult to find a well motivated South Korean than to locate a four-leaf clover. But how many Americans serving in Korea could honestly be classified as persons with truly high motivation? Most of them are there simply because they are better off financially. I have listened to so many complaints about the living quarters, food, and, above all, "those goddam Koreans" that it is a big joke for Americans to seek for motivation among Koreans. The sooner the Americans forget about the idea of seeking real motivation among the Koreans and work at the whole thing more from a human give-and-take attitude, the better off they will be.

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U.S. Expertise

From Germany

I can only say that the people with whom I have worked have apparently had intelligence training and some undoubtedly had long experience. However, frequent changes in case officers, at least during the initial period of each new one, indicated that the gentlemen were unacquainted with the area targets and they were not familiar with the specific problems involved. Individual situations and general appreciation of the operations were often quite foreign to them. There were times when the case officer failed to see the difference between operations X, Y, and Z. I observed that each case officer concerned gradually filled in the gaps of this type of background knowledge. This positive factor was true with all case officers: with time they acquired knowledge of the operational area and its problems.

From Korea

Every American in Korea is there to do a certain job in a limited amount of time. In most cases, he has to rely upon the services of Koreans in order to get this job done. It would be a lot easier for everyone if he would just concentrate on getting the job done by making the best use of the Koreans as they are rather than trying to teach or convert them to the American way of life or thinking. Such things should be left to the USIS people or the missionaries serving in Korea. The language barrier is no doubt one of the most serious problems confronting Americans in Korea and, at the same time, one of the most convenient excuses behind which many can and do hide their own inefficiency. Don't forget that the language problem bothers Koreans as much as it bothers Americans. Just knowing a few native words no doubt helps you in your social life, but you will find it of little use in your official work.

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Evaluation of Production

From Germany

Not one of my case officers has given me an assessment of my efforts. I am not aware whether or not headquarters is satisfied with my work. I would be very grateful if criticism would be offered periodically concerning my efforts. I do not consider myself to be a great specialist in the activity, but whatever I attempt is sincere in that I want to accomplish as much as the circumstances permit. For human reasons, it would be much better for me personally if I would know that the office is happy with my work and that my efforts have achieved at least some minimum of success. I certainly would not condemn anyone for criticism; in fact, I think such is necessary and I would be thankful for it.

My feeling that the efforts have been satisfactory comes only from deduction, based on the fact that I have not been released from employment and that my salary has been raised periodically. I do not desire light or cheap compliments or undeserved credit. However, it would be more profitable to me and my "growth" in the intelligence field if an assessment were given to me periodically. If the criticism is favorable, it gives a person strength and desire to achieve greater successes; if it is negative, it drives one to better application of effort in order to obtain a more favorable criticism in subsequent assessment.

From Korea

The worst trait of the case officer in relation to his men is that of indifference. In assessing the agents or in criticizing them for what they do or fail to do, the air of indifference is unquestionably most harmful. The case officer can "raise hell" with his agent, when necessary, but he must never assume an attitude of indifference. I recall one case officer who, when his men returned from a hard but unsuccessful mission, remained in bed and made no effort to receive them. Had the case officer received the group at the gate and reprimanded them, they would appreciate him more, and chances are they would feel very responsible for their failure in the mission. But the indifferent attitude of the case officer made the men forget all about their failure. It only forced them into an attitude of resentment and revolt.

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Mirror for Handlers

Promises

From Germany

In 195_, I was informed that I would be advanced to the status of "assistant" and that my salary would be raised accordingly. Further, on this occasion and in two subsequent instances, I was told that I would be given a contract to sign and that this contract would stipulate all terms of our relationship. I have yet to see or sign such a contract.

During the same period, I was told to take my wife for vacationing on the lake and that all expenses would be paid to me on my return. I took the vacation, although it was a rainy season, but I was not reimbursed upon my return; it was explained to me that the headquarters refused to grant the reimbursement.

What should I think about a series of false promises like these? I could only think that the case officers had no trust in me.

Mirror for Handlers

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From Korea

No matter how small and insignificant it may be, a false promise should never be given to an agent. You are not the only case officer who offended me thus, but let me give you some specific examples in our relationship. You have been extremely nice to me and my family, but you have made several false promises.

First, you told me several times that I could have your car from time to time after I got my license, so that I could take my family around for a ride. You said this even in front of my wife. But after I got my license you never even suggested my borrowing your car. Not that I would have accepted it anyway, but it was a false promise.

Second, it was your idea about my driver's license and you had me study the book of rules. You said you would take me to the Division of Motor Vehicles to apply for a learner's permit. You never meant it. When I got the permit anyway, you said you would take me to the police to get the final license. I waited, after more promises which you never kept, until finally I got the license through someone else. I knew you were busy, and it all would not have mattered if you had not told me later that you had taken your wife to the police for a license during the same period when you kept saying that you would take care of me.

Third, you kept saying for three or four consecutive weeks that you would come out to my home for a Sunday visit to see how things were. I waited for you with my family each weekend, but you never came or even called me. It did not matter too much because I had no place to go and had little choice but to stay home whether you came or not. Yet you were careless in making promises.

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Mirror for Handlers

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Handling

From Germany

Let us review our operational meetings during the past ten years. Most of them took place as follows: We met and shook hands. Then the case officer would ask, "What's new?" After making my reply, I would pull some reports out of my briefcase to read them, clearing up some points in the reports and answering questions. Here and there I would be offered American cigarettes. The meeting would take about an hour, sometimes two. At the conclusion we would ask one another whether there were any other questions, then arrange for the next meeting, shake hands and depart from one another. There has been nothing human about these meetings, no friendship, amiability, or other kind of gentleness. The meetings invariably turned out as crude business transactions. I provided the information and you paid me at the end of the month.

It is my thought that this type of dealing has had a seriously negative impact during the ten years of our collaboration. In this sort of relationship a person gradually becomes a robot, without a soul, without a moral basis. It brings forth undesirable complexes, it forces a person to lose his individuality, and, worst of all, it makes a person a paid agent. In order to rid one's self of this role, one has to go through a series of inner conflicts and one has to tell one's self that the situation is different from what it actually appears to be.

From Korea

Koreans, as a whole, are funny people. You cannot treat them too soft and you cannot drive them too hard; in either case they revolt against you. During my four years of work with American case officers in Korea, I did not know more than one or two who I thought had the right touch in their handling of Korean agents. I am inclined to believe that poor personnel handling by the majority of Americans should be blamed more than anything else if the outfit is not getting the results it should.

Let me give you here some examples of the kind of things which should be avoided by the Americans.

1. Don't expose yourself totally in the eyes of your agent personnel. If you do, they get tired of you rather quickly.
2. Don't try to sell dog meat while you have lamb's head hung outside. This is an old Chinese saying which makes sense. In other words, what you say you would do and what you actually do should always match.
3. Don't expect too much loyalty from the Korean agent if you yourself are giving him too little of your loyalty. Loyalty, like friendship, is reciprocal.
4. Don't criticize your fellow American members of the organization, including your predecessor and superiors, to your Korean men. They will think of you as a low character of repulsive nature.
5. Don't try to enforce the channel of command to your men while you yourself are violating the very same thing. Don't let anyone else touch your men, and at the same time don't try to give orders to somebody else's men without going through him.
6. Don't talk too much. The more you talk, the less they may think of you.
7. Don't eat popcorn on the street, chew gum during serious conversation, or blow your nose at the table.
8. Don't use your men for anything other than what you are paying them for; I know of several cases where agent personnel were used for all-around household duties and so produced far less in their main work.

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9. Don't refer any pending decisions to your superior in front of your men. Once your men know that there is someone else who is making decisions for you, you may as well give up and turn the operations over to someone else.

10. Drink with your men, but don't go near them when drunk because in that state you will lose all respect that you may have enjoyed up to that time. I recall one security officer who used to check the guard posts when he was in such condition that he could not walk straight. He made a laughing stock of himself.

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Objectives and techniques of acquiring assets in East European official missions around the world.

INSTALLATION PENETRATION

Walter Steinmeyer

The increasingly active participation of the USSR's Eastern European Satellites during the mid-1950's in Soviet diplomatic and economic offensives against the West and in particular the increasing challenge which the Soviet Bloc was posing to U.S. interests in underdeveloped and uncommitted nations occasioned in 1957 a review of our efforts to obtain intelligence concerning the intentions, strengths, and weaknesses of the Satellite countries, efforts which also now had to contend with a more rigorous operational climate than before. A combination of research, analysis, and experienced operational judgment brought the conclusion that one approach upon which increased emphasis should be placed was that of penetrating these countries' installations abroad.

This conclusion was based on a number of varied and inter-related factors. Prominent among these was the fact that the Satellite embassies, legations, consulates, trade missions, and news bureaus constituted the instrumentalities for that economic penetration, political subversion, and espionage that threatened U.S. interests. Another consideration was that the personnel assigned to these installations were outside their iron curtains for extended periods of time, two to five years, during which the full weight of the intelligence apparatus could be brought to bear against them.

In formulating an operational doctrine for the penetration of such installations, it was profitable to draw on the experience of professional West European internal security services that had traditionally mounted this kind of operation and in fact regard the penetration of foreign installations in their countries as the classical approach to the problem of procuring current intelligence. From time immemorial the installations of foreign governments in any European

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country have been the object of sustained interest on the part of that country's internal security service, and a body of proven operational concepts and techniques for penetrating them had consequently been established.

These European concepts and techniques offered a useful frame of reference against which to examine collection theories responsive to U.S. collection priorities. At the same time, they were subject to modification to meet the operating conditions to be encountered in third countries around the world where operations might be mounted against Satellite missions. The resulting doctrine for installation penetration operations has been tempered by experience in the school of hard knocks during the period 1957-1962, and it can now be said that principles governing the objectives and techniques of such operations have been crystallized.

Objectives

The first objective of a mission penetration program is *regular collection of current political and economic intelligence* from the installation in question. The *best* source for such intelligence would of course be an in-country agent who had access to the minutes of Politburo meetings. But given the difficult realities of operation in denied areas, a Politburo penetration is all but impossible, and political and economic intelligence obtained from a Satellite installation abroad is a welcome substitute for the visionary optimum. Most Satellite missions abroad are headed by a senior officer with status both in a ministry and in the Party. His personal rank and the policy functions of his installation require that it receive a large number of directives from the Party and from ministries (Foreign Affairs, Foreign Trade) of the government. The quality of the intelligence available through access to these documents is high.

A second objective is *the recruitment of Satellite officials* not only as sources for the period of their duty abroad but as *continuing agents after they return home*. Installation penetration thus becomes a means of establishing long-range assets in the Satellites by recruiting, testing, and training them while they are abroad. The Satellite diplomat, foreign trade official, journalist, or intelligence officer who has been useful to us abroad will be even more valuable when he goes

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back home at the end of his tour, not just because he is then inside the target country, but because the intelligence to which he has access in a ministry headquarters has greater scope and depth.

The third is a counterintelligence objective, *the identification and neutralization of members of hostile intelligence services*. Since diplomatic and trade missions abroad are used extensively by all the Satellites to furnish cover for their intelligence personnel, the penetration of these installations can and does lead to the identification of opposition intelligence officers and sometimes of their local agents, *modus operandi*, communications systems, and operational targets. Once this identification is achieved, their neutralization can be accomplished in a variety of ways—sometimes by police action, sometimes by doubling agents back, ideally by recruiting the hostile intelligence officer in place.

Fourth is an objective to be sought only when all possibilities for recruitment in place have been exhausted—the *defection of senior diplomatic, trade, or intelligence personnel*. Defection can obviously yield only those golden eggs already in the nest; it cuts off the continuing intelligence that could be communicated by an in-place asset. It may be worth while, however, simply to deny a target country the services of an able and experienced officer, and it may produce, in addition to his store of positive intelligence, leads to his former colleagues who are still in place.

The fifth and final objective in the penetration is *to build up indexes of Satellite officials abroad who are likely in the future to have other tours of foreign duty somewhere in the world*. An official may not be developable for recruitment during his current tour, but six months from now it might be a different story. Political turmoil being what it is within the Satellites, the "ins" can rapidly become the "outs." If we can identify a man as a former "in" who is now "out" we may be able to recruit him. But this kind of identification requires orderly and current biographic indexes of Satellite personnel who travel abroad.

The Probe

The achievement of a penetration in pursuit of these objectives rests upon a search for weaknesses through the syste-

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matic collection of operational intelligence, the exploitation of these weaknesses, and an ingredient of luck. In the probing for exploitable weaknesses the following sources of operational intelligence have proved useful to penetration operations. This list is not exhaustive nor in any order of priority.

American diplomats or business representatives in the host country. In countries where Americans have social, business, or diplomatic contacts with Satellite representatives they are a prime source of personality and assessment data on them.

The foreign diplomatic community in the host country. The protocol lists of the host country's Ministry of Foreign Affairs identify the Satellite representatives in the country by name and rank. Diplomats of the host country and of third countries have professional and social contacts with these Satellite representatives and are excellent sources of personality and assessment data on them. On occasion a foreign diplomat can also be used as a catalyst to bring the U.S. recruiter and his target together under appropriate and secure circumstances. Whether the target can then be developed to the point of recruitment depends on the recruiter's skill and the validity of our cumulative assessment of the target's personality and predisposition to cooperate.

Liaison with local intelligence and security services. At the minimum these services are usually a source of visa, passport, personality, and photographic data on Satellite representatives. At maximum they contribute to joint operations against the Satellite installations in the country.

Washington name trace. This furnishes the field operations officer all data on a person accumulated in the files of U.S. government agencies.

Analysis of the local press. This can identify people who attend the social functions at Satellite installations, deal with them commercially, etc.

Debriefing established agents with access to Satellite representatives. Of particular value here are journalists, politicians, or leaders in the cultural field who cooperate with us.

Telephone taps. A tap, unilateral or joint, of this primary means of local communication on social, cultural, political, and economic matters is a virtual gold mine of operational intelligence. Systematic and timely processing of telephone tap

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data can and does yield complete rosters of the members of a mission and their positions. Even more important, it can furnish penetrating insight into the relationships among the members: if a third secretary fails to display over the telephone a habitual due respect for a first secretary, this is reason enough to start suspecting that he exercises intelligence or Party security functions.

The aggressive exploitation of the tap's revelations about who in an installation deals with whom, when, and on what subject matter can develop operational leads to local residents who, screened and recruited, might ultimately become avenues of approach to the Satellite representatives. Telephone taps have identified hostile agents and their methods of contact with the intelligence residentura in an installation. They have also provided personality data and detailed information on the contacts of a Satellite official in his homeland. Such information has facilitated not only the recruitment of target officials but also the quick appraisal of their eventual access to useful intelligence.

The key to success in the use of telephone taps is the timely field processing of the perishable information they offer. And the key in deciding whether to mount one is the need for operational intelligence; they rarely, if ever, are consistent producers of significant positive intelligence. The need can be determined only by estimating the potential of this source against other available sources of operational intelligence.

Physical surveillance. The routine gumshoe technique, if applied judiciously and in conjunction with a telephone tap, can yield important data on the activities and contacts of an installation's personnel. These not only provide leads to persons who may eventually help in approaching Satellite officials for purposes of recruitment but also identify counter-intelligence suspects. Physical surveillance also serves to establish a regular pattern of activity or norms of behavior for a given Satellite official as the basis for selecting a secure time and way to approach him in developing his recruitment. A discreet and thorough surveillance for this purpose requires both foot and vehicular capabilities. The intentional obstruction of these capabilities, on the other hand, can be used selectively as a deterrent to reduce the aggressive intelligence

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activities of a given Satellite installation. Thus physical surveillance becomes both a defensive technique and an offensive instrument for installation penetration.

Photographic surveillance. Clandestine photography of people entering and leaving a Satellite installation is a useful practice, primarily in support of counterintelligence objectives, especially when the subjects include members of the mission as well as local residents. Experience has been that passport and visa photographs of most Satellite personalities are five to ten years old, and current clandestine photographs are therefore a valuable supplement for any locally maintained rogues' gallery used to help double agents identify their handlers, as well as for Washington rogues' galleries which can be viewed by defectors. But photographic surveillance has also in the past identified numerous operational leads, particularly to hostile intelligence officers.

Floor plans. The floor plan of an installation is a useful tool in planning audio and surreptitious entry operations. It is also useful as a basis for plotting who sits where in an installation. A simple analysis of physical arrangements can sometimes reveal people's real functions—cipher clerk, Party secretary, intelligence officer, etc.

Service personnel. These people, usually local residents, can if properly harnessed be valuable stepping stones to full-scale penetrations of a mission. Of particular importance are the telephone operators, secretaries, janitors, fuel deliverers, mailmen, trash collectors, police guards, public utility meter readers, and the mechanics who service the automobile fleet. The aggregate knowledge of an installation that can be gained from their access to it is remarkable.

Defectors. The defector from a target installation should be debriefed not only with respect to positive intelligence and operational leads, but for any operational intelligence which can facilitate the penetration program.

If any considerable number of these sources is harnessed effectively, the data they produce will be voluminous enough to require systematic processing. The raw information must be synthesized and put into a form readily usable for identifying operationally exploitable weaknesses. It is best to organize it into two sets of files, one concerning the installation

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itself, recording by category all its important physical details, and one a series of dossiers on the individuals in the installation. Each individual should have a separate file, established when he first applied for a visa to enter the host country and not to be closed until he leaves it. Even this closure is only a holding action; the file is consolidated and retired to headquarters for future use when its subject reappears in the West.

Types of Penetration

There are essentially only four types of penetration operation, as follows.

Planned recruitment of an in-place agent. This type of operation is the one we have had chiefly in mind above—targetting an individual, collecting operational intelligence, finding his weakness, developing secure access and a cooperative relationship, and then making a successful recruitment pitch. It can be carried out unilaterally or done jointly with a local liaison service. The objective is to acquire an important asset in a Satellite official with continuing access to useful intelligence.

Recruitment and return of a walk-in. This second category differs from the first chiefly in the manner of initial contact, but the difference is important: the man has usually taken the initiative and come to us because he is in trouble. We can make the most of the opportunity if we are ready to act when he comes. If a sound installation penetration program is mounted against any target for a sustained period, when breaks occur and walk-ins develop, as they will, we can take advantage of them by having done our homework in advance. The walk-in's bona fides can be resolved quickly, and if he can be persuaded to go back in place we are prepared to exploit him as a source immediately and in full.

Audio penetration. Here microphones or transmitters are placed in key and sensitive spots of a hostile installation and the audio pick-up monitored. Microphones can be inserted as probes in a common wall or floor with areas of interest in a hostile installation. Or audio surveillance equipment can be planted in a building into which a Satellite installation is about to move. Short-term audio operations can be mounted

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with battery transmitters concealed in furniture, etc., by agents recruited for instance from the service personnel.

Not every installation, however, is worth penetrating by audio surveillance. Some of the factors to be considered are the importance of the particular installation to the Satellite in question, the stature of its senior officer, the number of visitors it has from home, and the counter-audio capability of the target country.

Surreptitious Entry. This is the most complex of the penetration operations and one high in flap potential. It is a type of thing for which Americans generally do not have a flair. In its ultimate implementation, however, it is productive, providing access to the opposition's most sensitive safes and files. If it can be done without detection we not only obtain photographic copies of current documents but retain the capability to renew them at some future time. This capability would be particularly important in the matter of cipher pads and cryptographic procedures.

A mission penetration program is not of course a panacea for collection problems. But if the objectives of the program are held firm and the techniques outlined above pursued with diligence, penetrations of Satellite installations can be achieved, and they will produce intelligence responsive to collection requirements. This intelligence, in the final analysis, is our reason for being in business; our success is measured not by the quantity of our operations but by the quality of our end product.

A lecture delivered in 1947 by the father of scientific intelligence, a classic of the literature, is reproduced here because it bears witness to the labors of the infant Hercules, contributes to the intelligence history of the war, and says some wise things about the nature of intelligence.

SCIENTIFIC INTELLIGENCE ¹

Reginald V. Jones

Public statements regarding intelligence are very rare. One reason for this is security; you cannot say much about your own intelligence service—and particularly about its success—without disclosing something of value to a potential enemy. But this is equally true of any statement you may make about any aspect of your defence system, yet it has been found worth while for distinguished officers to outline publicly the principles of their strategy and armament. Our gain in having the views of successful commanders spread throughout our own country more than offsets the loss in security. I believe, therefore, that it is not entirely for reasons of security that intelligence is so rarely discussed in public: there is a deeper reason. Owing to the inadequate status which intelligence has hitherto been accorded in our defence system, it has rarely been able to command a staff of mental calibre commensurate with the difficulty of its problems. As a result, while much thought has been given to the principles of strategy and while penetrating treatises have been written on that subject, a coherent philosophy or doctrine of intelligence has until now failed to develop.

It is hardly surprising, therefore, that published opinion regarding intelligence is, on the whole, derogatory. Take, for

¹ First published in the *Journal of the Royal United Services Institution*, August 1947, pp. 352-60. This minimally edited version is annotated by T. M. Odarenko, who worked in liaison with Dr. Jones during the war.

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example, Clausewitz. While he says that intelligence is the foundation of all a commander's ideas and actions, he goes on to state that "a great part of the information obtained in war is contradictory, a still greater part is false, and by far the greatest part is of a doubtful character." Shakespeare's King John, having been let down by his spies, expressed himself rather tersely: "Oh where hath our Intelligence been drunk, where hath it slept?" And, knowing the two classic methods of intelligence, he might well ask!

Despite, however, the hard things that have been said about intelligence in the past, I believe that its development during the recent war was so vast that a coherent philosophy has now evolved. It is about this, in particular relation to my own branch, Scientific Intelligence, that I want to speak. My approach will be largely historical not only because, as Mr. Churchill has said, strict chronology is the secret of good narrative, but also because I know of no more convincing way to present the philosophy of intelligence to you than along the path of direct experience by which I travelled myself.

Germination

Early in 1939, the Committee for the Scientific Study of Air Defence drew attention to our ignorance of new German weapons. It was therefore suggested that a scientist should be attached to the intelligence branches of the Air Staff to find out what was wrong and whether an improvement could be effected. I was the scientist selected but, owing to Treasury opposition to the general proposal, the war broke out before I took up my duties on 11th September, 1939.

Eight days later Hitler made his famous "secret weapon" speech—in which, in fact, he made no reference to a secret weapon. The subsequent alarm in this country was due to an error in translation, for it was clear from the BBC's record of his speech that Hitler was not referring to a specific weapon, or *Waffe*, but to the Luftwaffe as a whole. In the meantime it had become my task to search through all the intelligence files for possible new weapons, and while the material in the files was very nebulous, I was able to indicate that certain weapons would have to be taken seriously: these included (quoting from my first intelligence Report) gliding bombs, pilotless aircraft, long-range guns, and rockets. But my search

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through the files had also taught me how primitive was our intelligence service compared with what, from a schoolboy onwards, I had imagined it to be.

At times of alarm, such as followed the outbreak of war and Hitler's speech, casual sources crop up in large numbers. These are mainly people who, under the stress of the situation, think that they have information of value to the country. Much of the information is useless, but in the days following Hitler's speech one casual source came up whose information was of remarkable interest. It happened in this way. Our naval attaché in Oslo received an anonymous letter telling him that if we would like a report on German technical developments, all we need do was to alter the preamble on our German news broadcast on a certain evening, so as to say, "Hullo, hier ist London," instead of whatever we usually said. The writer would then know that we wanted the information and would send it to us.

We duly altered the preamble, and the information arrived. It told us that the Germans had two kinds of radar equipment, that large rockets were being developed, that there was an important experimental establishment at Peenemünde, and that rocket-driven glider bombs were being tried there. There was also other information—so much of it in fact that many people argued that it must have been a plant by the Germans, because no man could possibly have known of all the developments that the report described. But as the war progressed and one development after another actually appeared, it was obvious that the report was largely correct; and in the few dull moments of the war I used to look up the Oslo report to see what should be coming along next.²

That was at the beginning of November, 1939. A month later I drew up my first report on the organisation of scientific intelligence. I was subsequently to write several more, but they were rarely accepted. I asked then, as I have asked since, for a single scientific intelligence organisation working on behalf of the defence system as a whole. One reason for this is that many weapons are of interest to at least two services. A single scientific intelligence organisation, moreover, could

² It may be possible in a future issue to tell the story behind this anonymous report.

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probably have functioned with less staff than three separate organisations—an important consideration in a country where scientists are scarce, as they were in ours during the war. A further reason was that, for reasons which I shall explain later, I believe that scientific intelligence requires a single head to direct it.

But the importance of scientific intelligence was not yet generally appreciated, and not merely did I fail to get an inter-service organisation, I failed to get any help at all, even a secretary. For myself, I had no doubt regarding the importance of the work. It seemed obvious to me that while scientific intelligence could not by itself contribute more than a fraction towards winning a war, a failure of scientific intelligence to detect the development of a new hostile weapon in time might well result in national disaster. This at all times was a somewhat terrifying thought, but it left no doubt about scientific intelligence being worth while. And while I even had to plead with my Director on several occasions to be allowed not to abandon scientific intelligence during the "phoney war" period, my own conviction regarding its value remained firm.

I conceived scientific intelligence, with its constant vigil for new applications of science to warfare by the enemy, as the first watchdog of national defence; and to be a good watchdog it is not sufficient to detect the approach of danger—you must bark at the right time: not too early, for then your master becomes dulled to danger by too much barking, nor too late, for he may then be overtaken by disaster; and you must not bark at false alarms.

My failure to obtain help in the early days had one interesting result, the significance of which I hardly realized at the time, although it coincided with the philosophy that I was already building up. To explain its nature I must first describe how an intelligence organisation works.

Functions and Organisation

An intelligence organisation—despite the Encyclopaedia Britannica dig about there being three kinds of intelligence, human, animal, and military—resembles in fact a human head very closely. The sources of intelligence correspond to the sense organs of the head; the detailed resemblance here is

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in some cases remarkable, with photographic reconnaissance as the eyes and the radio listening service as the ears. The senses pass observations to the brain, where they are correlated, and a particular sound is associated with a particular visual object. In intelligence, information from the sources is likewise fed to a collating centre, corresponding to the brain; and just as the brain, to be successful, must have a good memory, an intelligence organisation must have a good memory built up of the individual memories of its staff and its filed records.

So far no machine has been found to perform these functions nearly so well as a good human mind, and the design of an intelligence organisation must be such as to make it resemble a single perfect human mind as closely as possible. It follows from this that the most successful intelligence organisation is likely to be that which employs the smallest number of individual minds each of the greatest possible ability. For only then can you get those vital correlations of, say, a shadow on an air photograph with a fragment of a decoded intercept, or with a report or a sketch from a secret agent.

It has for a long time been appreciated that there are two functions of an intelligence system, known as the "collection" and "collation" of information. These cover the functions of the human head as I have so far described them. They present an enormous difficulty in organisation in that, whereas information enters the intelligence machine by source, it has to leave it by subject: it is this changeover inside the machine that causes all the difficulty. In practice there are many subtle cases which almost defy classification as peculiarly collection or collation functions. It is not surprising that in an organisation which has to be expanded rapidly in wartime considerable confusion results.

Now for me, this problem did not immediately arise. Since there was only one of me to do everything, I could not split myself into two separate halves. Orthodox intelligence in this country is, however, fairly rigorously split, with service intelligence branches doing the collation duties and inter-service sections doing the collection of information. This division of duties has drawbacks; notably there is insufficient contact between the service users of the information and the

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actual sources of that information, and also there is no direct responsibility on any one organisation to develop new sources. The collators cannot do it, because it is not within their terms of reference, while each collection organisation can only deal with the kind of source for which it was originally set up. Now I, with my enforced duty as maid-of-all-work, was unfettered by any of these restrictions; and I found it of such benefit to break through them that I framed my later organisation to take advantage of this fact.

Before proceeding with the narrative, I should like to say one thing more about the functions of an intelligence system, the importance of which, unlike collection and collation, was not generally realized. With perfect collection and collation you may succeed in building up an accurate picture of what the enemy is going to do. But the test of good intelligence service in war is not merely that you were right; it is that you persuaded an operational or research staff to take the correct countermeasures. To do this it is necessary first to build up a reputation for accuracy and timeliness, so that from experience they find that they can trust your pronouncements. And, as I said before, it is not good enough to bark at the slightest approach of danger, you must first learn enough about that danger to be able to tell the operational staff what it is, so that they can take definite action. Otherwise you merely distract them with something that may not materialize. I have seen operational reaction to a new enemy weapon entirely vitiated because the intelligence section concerned barked too early. On the other hand, if you are certain that you have correctly ascertained the nature of the danger you must spare no effort to ensure that the operational staff fully appreciates what is about to happen.

If you pursue the policy I have described you will undoubtedly from time to time make yourself unpopular. You will at times be accused of hoarding information, and at other times you will be called an alarmist and will be told that you have no business interfering with operational policy. But in the end you will be justified by events.

Radio Beams

I may seem to have wandered a long way from my narrative, but most of these thoughts were growing in my mind during

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the "phoney war" period. I had already decided that, my first attempt at an organisation having been rejected, I would go on alone to see whether I could prove my beliefs by practical demonstration. That demonstration came even sooner than I had expected.

In June, 1940, I received the culminating information on a trail that I had been following for some months, which led me to the conclusion that Germans had developed a radio beam system for blind bombing known as Knickebein.⁵ They had taken care to disguise the receiver in their aircraft as being designed for blind landing, but we managed to unmask its true purpose. The importance of this development was great. The evacuation from Dunkirk had just occurred, our air defences, while excellent by day, were almost impotent by night, and the whole of the German bomber force could come over then and drop most of its bombs into the area of intersection of the beams, which were little more than half a mile wide over London. Thanks to the ready appreciation of Lord Cherwell and Mr. Churchill, who had recently become Prime Minister, steps were immediately taken to check whether I was right; and on the night of 21st June, 1940, a Royal Air Force search aircraft went up and detected the beams on the expected frequencies and in the expected place.

Even before we had finally found the beams we were starting countermeasures to jam them; this was the beginning of the radio war. When the beams came into serious use at the beginning of the night Blitz,⁶ there were enough jammers to upset them, and many bombs intended for such a large target as London fell in open country. There is a story that during this period, which lasted over two months, nobody had the courage to tell Goering that his beams were jammed; for he

⁵ Early in the year there had been obtained a German document that referred to a radio navigation system for blind bombing. In March German prisoners began to refer to the Knickebein—"Bent-leg"—system by name. Dr. Jones' "culminating information" in June was an intercepted operational message which indicated that Fliegerkorps IV was equipped to use the Knickebein. Since the Fliegerkorps IV bombers were all HE III's, whose radio instrumentation was known, it could be concluded that the Knickebein beams were transmitted in the frequency range 28-35 megacycles.

⁶ 23 August 1940.

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had said, after his defeat by day, that he would change to night attack by means of the beams, which were unjammable.

The chase of Knickebein was the best fun I had ever had—but it had its frights. It was here that I learned for the first time the danger of expert opinion in intelligence. For the same facts as I had had about Knickebein were also given to a scientist outside intelligence who was an acknowledged authority on the propagation of radio waves. He said that my solution of the problem must be wrong because it was impossible to make a shortwave beam which would bend sufficiently round the curve of the earth from Germany to enable it to be heard in a bomber over England. He proposed an alternative solution which was obviously unfeasible on the intelligence evidence, but which nearly led to the cancellation of the vital flight that confirmed my solution. It was only the fact of Mr. Churchill's personal order that finally forced the search to continue.

Our own experts proved so repeatedly wrong in their opinions about new German weapons throughout the war, despite the fact that in their own fields they more often than not proved superior to their German counterparts (and that is one of the reasons why we won the war) that there must have been some underlying factor in their errors. In mentioning this I have no desire to demonstrate that I was better at my own job than the experts who often tried to do it for me, except in so far as it may make the path of my successors in scientific intelligence easier. What was not realized is that the expert in this country on a particular scientific development is not the best man to interpret the information received from intelligence sources. He is, in fact, not a col-lator—he is a source. He is that source who spies on the laws of nature in so far as they affect the weapon under consideration.

He is a valuable source, for the laws of nature acknowledge no political frontiers. But he is human and fallible, as are all sources of intelligence. If therefore his opinion conflicts with the intelligence picture as built up from the evidence of the other sources, it is certainly a case for going over this evidence again. And if it still appears reasonably conclusive, then you must go back and query the expert's evidence just as you have

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queried the other sources. For this reason, which the expert can rarely appreciate, the final word must not be with him: it must be with independent scientists well versed in the art of intelligence. It is on this argument that the case for an independent scientific intelligence organisation largely rests. All my experience in the war convinces me that it is sound.

Returning to the Blitz, we had a hard fight with the beams during the last two months of 1940, after the Germans realized the fact that Knickebein was jammed. The cause of the trouble was a new beam system of even greater accuracy, employing an equipment with the intriguing title of "X Apparatus." We soon found what the X Apparatus was, and how it worked.⁵ It was used by only one formation, Kampfgruppe 100, which was intended to do precision bombing. But although we had discovered the correct frequencies on which to jam it, an unfortunate technical error⁶ rendered our jamming ineffective until almost the end of the year. In the meantime, the Germans switched Kampfgruppe 100 to dropping incendiaries and so marking the target for the rest of the de-Knickebeined Luftwaffe. This was the beginning of pathfinding, which was later adopted also by Bomber Command. Coventry was the first target attacked by the new method, which caused a good deal of destruction until finally countered in January, 1941.⁷

Then with X Apparatus now out of action the Germans tried their next trick with "Y Apparatus." This time, however, we were particularly successful, because we had it entirely worked out in advance. This was partly due to one or two lucky guesses, and partly to the Oslo report, which I had decided to

⁵ The X-Gerät consisted of a guiding beam laid over the target and transverse beams laid across it sufficiently in advance of the target to permit the bombardier to work out automatically the correct bomb release point.

⁶ Incorrect measurements of the modulating frequency in intercepts of the beam. The error was discovered only after careful analytic work on the radio equipment of a Kampfgruppe 100 plane that crashed in England late in November.

⁷ There persists a story, to which the British are extremely sensitive, that Coventry was not a deliberate German target but was mistakenly marked as one by a Kampfgruppe 100 pathfinder who was confused by antibeam measures and thought himself over London.

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trust. Whereas the X system had depended on setting up crossing beams in the target area, the Y system used only one beam, down which the bomber flew. By a special new radio method its range along the beam from the transmitting station was found,⁶ and when the bomber had reached the correct distance it was told to drop its bombs. What the Oslo report told us was that the Germans were experimenting with such a method of range-finding (curiously, the Oslo report had made no mention whatever of beams), and I guessed that the Y Apparatus would use this system. As a result we had several months' warning of what was coming, and on the very first occasion on which the Germans decided to rely on the Apparatus for pathfinding they found it jammed. Thereafter they were largely restricted to coastal targets where they did not need any beams, and the main danger was temporarily over.

All this had demonstrated what scientific intelligence could do—at least for the Air Staff; and I was permitted to have some assistance. The main reason for my first helper was simply that at one time a good deal of the information had to be carried in my head, and I might well have got knocked out in the Blitz. Not that I ever wanted a large staff. For the reasons that I have already indicated, I believe that intelligence is best done by a minimum number of men of the greatest possible ability; and the staff that I gradually acquired certainly conformed to both these requirements. There were never very many of us, and we proceeded, as I had started, by running both the collection and the collation in one section.

Night Defence Radar

With the end of the Blitz we were able to turn our attention more to offensive intelligence; by this I mean the production of information concerning the enemy defences for the benefit of our own offensive. It proved a more difficult task, for in the Blitz we had had a steady stream of prisoners, equipment, and documents from crashed aircraft which would almost always, sooner or later, put us on the right track. In of-

⁶In the Y-Gerät a transponder/delay box in the aircraft retransmitted signals sent out by the ranging station on the ground. Range along the beam was determined by the time lag between original transmission and receipt of the response.

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fensive intelligence, however, all these sources were denied to us; and as an item of intelligence I have had more regard for the work that we did in this direction than for that against the beams, although in many ways the latter was more dramatic.

In turning to the offensive I had to decide where our limited effort could produce the greatest result. The decision did not take long. I knew that most of our own scientific effort was at that time going into radar development, and I knew also that our night defences depended very largely upon radar aids. As our bomber offensive, to which we were now committed, grew, it seemed very probable that the Germans would come to depend, as we had done, upon radar. In trying to find out about their radar we were therefore conducting a basic intelligence assault upon the German defence system.

As a limited objective, having regard to the slender means of intelligence at our disposal, we directed our main effort first against the chain of German radar stations on the Channel coast, for these were within range of our photographic reconnaissance aircraft, and also they might be picked up by radio while they were transmitting. This twin thrust achieved both results almost simultaneously, for the Photographic Reconnaissance Unit obtained the first low oblique of a German radar station almost at the same time as one of our officers first heard its transmissions in February, 1941. Having found the first one, it was much easier to find similar stations, and as the year progressed we gradually built up our knowledge of the coastal chain.

The coastal chain was not of course the main belt of German night defences; these had still to be detected. But this detection was going to be a good deal easier now that we knew the characteristics of at least one type of German radar equipment. We could then plan a wider effort. We could listen to the radiotelephony conversations of the German night-fighters, which were now beginning to appear on a serious scale. We could analyse this traffic, although it was naturally as disguised by code language as the Germans could make it, and see whether we could deduce anything about the methods of control which the Germans were using. We could also take bearings on the transmitters and so find the position of the

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night-fighter areas. As many of these were in occupied territory, we could then brief friendly agents in that territory to look for radar stations similar to those on the coast; and then from the pinpoints given us by the agents we could once again send out our photographic aircraft to obtain pictures, and special aircraft to listen for the radar transmissions. All our available sources could thus be swung into one big operation.

It is in the planning of operations such as this one that I believe we made our biggest advance. That they were possible is largely due to the new kinds of sources that were available to us and which we developed ourselves as the war proceeded. Given any new problem, we would survey our existing sources and see how they could be brought into the attack on it and what new sources could be developed specially for this attack. New weapons often inspired new sources; radar, for example, almost automatically invited the search aircraft equipped with a battery of listening receivers, and this soon developed into a regular source.⁹

Some Collection Operations

The Bruneval raid was one of the thrusts in the intelligence assault on the German night defences. The Germans themselves afterwards called it "a violent technical reconnaissance by the English."¹⁰ It depended on a photograph, and this is the story behind it. After a chase extending literally from the Black Sea to the English Channel, one of my staff found a small speck on a photograph, so small that we had to examine several photographs to prove that it was not a speck of dust. We had found this speck by a process of deduction. We knew that the Germans had a new kind of radar equipment known as the Würzburg apparatus, and we suspected that this would be used in some form for controlling night-fighters. We also guessed that it might be small—too small to be found

⁹ These "new kinds of sources" grew ultimately into what is known in the UK as "technical search" and in the United States as Elint.

¹⁰ We hope in a future issue to present the full story, from the scientific and technical officer's viewpoint, of this raid, a spectacular commando-type operation mounted solely to obtain a sample transmitter from a new German flak-control radar. Its success contributed greatly to knowledge of the German night defenses.

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without some external help on air photographs. Nevertheless, it was a good bet that the Germans would put it alongside some of the larger equipment that we had already discovered, and we therefore searched all photographs showing the larger equipment to see whether there were any likely specks. We ultimately found the one near Bruneval.

The next stage was to get it photographed. But before we had time to put in an official request, our suspicions came to the notice of a photographic pilot—Squadron Leader Tony Hill, who promptly took off unofficially to have a look at it. He came back with the exciting news that it looked like what we had expected—a large electric bowl-fire; but his camera had failed to work. He was about to take off again the next day, again unofficially, when he was stopped because three aircraft from a rival squadron were officially scheduled to be taking photographs in the same area at the same time. He thereupon taxied his aircraft over to the others and told them that if he found any of them within twenty miles of the target he would shoot them down. He went out and got his photographs unmolested. They were among the classics of the war, and they led directly to the Bruneval raid.

Tony Hill subsequently took nearly all the most dangerous obliques of the radar stations that we wanted, and we owed him a very great debt for his skill, courage and enterprise. Low oblique photography did not come easily to him; in fact he was originally rather slower than average, but by hours and hours of determined practice he made himself the greatest low oblique photographer of the war. It is one of the tragedies of intelligence that good work by its sources can rarely be publicly recognised, but none of these unnamed sources would, I am sure, begrudge Tony Hill this recognition. He died in a German hospital of wounds received while photographing Le Creusot on Trafalgar Day, 1942; it was a sortie so dangerous that he, as squadron commander, would allow none of his pilots to do it.

With Tony Hill there were many other fine pilots in the Photographic Reconnaissance Unit, many of whom did magnificent work for us. Facts are always better testimonials than adjectives, and I know of no more remarkable contrast in the whole war than the fact that the Germans did not

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achieve a single photographic reconnaissance of London, only 50 miles inside our coastline, from 10th January, 1941, to 10th September, 1944, while our photographic pilots brought us back pictures consistently not only from Berlin but also, on occasions when we asked for them, from Poland and from Bruster Ort near Königsberg, where the Germans thought that they were secure in doing their flying bomb training. That is a true testimony to the skill and courage of our pilots and to the excellence of their aircraft; it is also a testimony to Fighter Command.

The success of the Bruneval raid finally depended on a RAF radio mechanic—Flight Sergeant C. W. H. Cox, who had never previously been out of England, on the sea or in the air, but who volunteered for this dangerous operation and, after a short training, parachuted at Bruneval. In my final briefing to him I warned him of the danger of his being specially interrogated if taken prisoner, and above all to be careful of any German officer who was unexpectedly kind to him. He stood to attention, smiled, and said: "I can stand a lot of kindness, Sir." I am sure that it was only his coolness and skill in dismantling the Würzburg apparatus, which he had never before seen, in the dark and under fire, that made the Bruneval raid the outstanding success that it was. I mention this fact specifically, because a recent film, "School for Secrets," at least implies that it was all due to civilian scientists. It is true that a civilian scientist did go (and several others volunteered to go) on the seaborne part of the raid, but none of us would like to steal the credit for the Flight Sergeant's splendid performance.

While the Bruneval raid was spectacular, the work of some of our secret agents, notably the Belgians, was equally effective. Fired at by German sentries and unable to know whether their information was getting through or what we were doing with it, they nevertheless sent us information in enormous quantity. Of all the many gallant stories I can only select one about an agent whom I had asked to pinpoint some German searchlights for us. Instead of laboriously going round the countryside finding them, he broke into the

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hut of the German officer commanding searchlights over literally half of Belgium and secured his map showing the positions of every searchlight and radar station under his command. That was an enormous help. In fact it provided one of the most vital clues in the entire intelligence picture.

One more story. Towards the end of 1942, it became clear that the Germans were at last putting radar equipment into large numbers of their night-fighters. There were one or two facts concerning the actual transmissions from this equipment that we needed to confirm. Accordingly one of our special search aircraft was asked to trail its coat in front of a German night-fighter to see whether it could hear the transmission. It succeeded almost too well; it was attacked 11 times by a night-fighter and nearly all the crew were wounded. The operator on the listening receiver, Flying Officer Jordan, was hit in the head by a cannon shell, but continued to listen and to warn the pilot of the successive approaches of the night-fighter. Our aircraft then limped home. The crew pushed their most wounded member out by parachute over Canterbury with the vital log of observations, in case they should crash on landing. They then took their aircraft out over the coast again and came down in the sea, as it was in too bad condition to land. Fortunately they were all saved.

Countermeasures

These stories are just a few of many that happened in the course of that offensive effort which culminated at the end of 1942 in a complete knowledge of the German defence system as it was. It was a very great privilege to have developed that effort with such a great company of sources. From then on, we could say exactly what countermeasures were required, and as the German system changed as a result of these countermeasures, we were always able to follow and at times to anticipate it. Once we had found the scientific principles and technical details employed in the equipment of the German night defences, all the other intelligence, such as order of battle, deployment, and so forth, fell into place; and we were

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given the final responsibility for fitting it all together. This is one of the reasons for the importance of scientific intelligence, because the scientific principles and technical details underlying a particular kind of equipment determine its tactical limitations, and these in turn determine its strategic application. Once you have discovered the scientific principles of the enemy's equipment, it is therefore natural that the way he employs it, i.e., his tactics and strategy, can then be understood.

The path of intelligence, as usual, was not smooth. There were always people to challenge our interpretation of the evidence and to deny the danger of the German night-fighters. So serious did the situation become at times, when it appeared that only we in scientific intelligence could see the need of particular countermeasures, that I sometimes had to make vigorous appeals for countermeasures to be employed. It is a fact, for example, that Lord Portal of Hungerford, as Chief of the Air Staff, took me with him to the Prime Minister when the Air Ministry made its final fight to use "Window" in 1943.¹¹ We had, of course, been fighting to have it used for at least six months before, because we could clearly see the mounting powers of the German night-fighters; but we had a little difficulty in persuading Bomber Command that their losses were not mainly due to flak. And we had, moreover, found in December, 1942,¹² that the Germans knew about Window but were frightened to use it themselves, so that

¹¹ "Window," a code name at the time, is still used as a generic term for decoy devices which produce false signals to confuse the radar operator and in particular for reflective chaff dropped for this purpose from an aircraft. After Churchill's favorable decision terminated the long and heated controversy over whether it should be used, it was so successful, in the Hamburg raid of 24-25 July 1943, that the Germans thereafter referred to the chaff as "Hamburg bodies."

¹² Through an intercepted message.

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there was no case against our using it for fear of teaching the Germans about it.¹³

There were several reasons why I felt strongly about countermeasures. The first, of course, was that I did not want to see our bomber crews lost. It would have been invidious to avoid disfavour by acquiescing in the non-employment of Window when such an issue was at stake. A second reason was that I had a duty to the sources who had risked so much to enable me to build up the picture of the German night defences. I was not going to see their work wasted by inaction. There is nothing more demoralising to a source than to see no action as the result of his work. On the other hand, to see direct action is often the only reward he can receive; but it is the best of all.

On the whole, our orthodox intelligence system has not realized this, its most important duty to its sources. I attribute this fact to the rigorous split between collectors and collators. It is the latter who have to present the intelligence case to the operational staff and, as they never have personal contact with the sources, they have not such a lively appreciation of their responsibilities in this direction. I think that this is one of the greatest drawbacks of our orthodox system; I never allowed it to occur in mine. To keep faith with his sources should be one of the first rules of an intelligence officer.

¹³ The Germans were nervous about using it (they called it "Duppel") because they had conducted no large-scale operational trials and because they felt that in a Window war they would lose more than they would gain. After the Hamburg raid, however, they followed suit, and metallized paper dropped from their aircraft to jam radar stations in the UK on the night of 7/8 October 1943 caused considerable confusion and excitement. They made several other raids with Window that fall, concerning which the official British view was that it "was not seriously detrimental to the defence because it was not dropped in sufficient quantity, nor had the dropping technique been properly developed." But the following year, during the heaviest attack (28/29 January) of the "Little Blitz," the accompanying Window had a serious effect on the British GCI radar, and throughout the January-June period of the Little Blitz the defense felt its effects.

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The Long-Range Rocket

Fortunately for chronological accuracy, the back of the night defence problem was largely broken just as a new threat appeared. This was the long-range rocket. The intelligence story behind this might have been perfectly normal, because the rocket problem could have been solved, as finally it had to be, by the application of what were now becoming our standard methods of attack. But unfortunately another intelligence section, while correctly interpreting the early intelligence reports as indicating a long-range rocket, nevertheless caused unending trouble by barking too soon. As a result, an alarm was raised and it was widely believed in May, 1943, that London would within a few weeks be attacked by rockets weighing 80 tons with a 10-ton warhead. We, having the same facts, had raised no alarm at all, beyond telling a few senior officers that we were after the rocket at Peenemünde, because we did not know enough, and certainly nobody else knew enough to take any countermeasures. The thing to do was not to raise an alarm but to seek fresh facts—a phrase which might well be incorporated into the intelligence officer's creed.

Once again we planned our attack on the new intelligence target, and we were delighted with the results, for by a very long shot we got right into the heart of German long-range weapon development.¹⁴ It is very doubtful whether we could possibly have taken such a long shot without our previous experience with the beams and the night defences. This incident convinced me more than anything in the whole war of the value of experience in intelligence.

But long shots take a long time to hit the target, and in the meantime we had to proceed by more direct means. Peenemünde was photographed from the air and secret agents were insinuated into the army of foreign workers at that place. One of the photographs showed what was unquestionably a large rocket, and this almost clinched the evidence. But since some of our own experts had hitherto thought such a large

¹⁴ We have no information on the nature of this "long shot." It may be possible in a future issue to present the history of intelligence on the V-weapons in greater detail than Dr. Jones does here.

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rocket impracticable, they argued that it was a hoax to distract our attention from more important developments.

Now if it were a hoax, and it succeeded, we should probably be led to bomb Peenemünde; the Germans would presumably only tempt us to do this if Peenemünde were not a genuine, serious experimental station. I finally managed to show that this was extremely unlikely from an apparently insignificant piece of evidence gathered in quite another field. This was a circular to various German Air Force experimental stations, signed by a petty clerk in the German Air Ministry, giving revised instructions for applying for petrol coupons. Now all the experimental stations were on the list of addresses, apparently in order of importance, and Peenemünde was shown on the list above some other stations of whose importance we were certain. The clerk, who could hardly have known that his little circular would come into our hands, was in fact an unconscious witness to the importance of Peenemünde. The petrol instructions, to my mind, finished the case. They showed that Peenemünde was as genuine as our own Farnborough, and whatever hard things may have been said about the latter establishment, few of us would actually have liked to see it bombed.

Following the intelligence build-up, Peenemünde was attacked by Bomber Command on the night of 17th August, 1943. I see from Air Chief Marshal Sir Arthur Harris's book, "Bomber Offensive," that there has been some controversy about the effect of this raid. Here are the facts. We killed their chief jet designer and we burned up all the production drawings for the large rocket just as they had been completed for issue to industry. The Germans, worried by the damage that we had done to their experimental factory at Peenemünde (and at Friedrichshafen, which had already been bombed on our advice) decided to put their rocket production underground and to move their experimental work to Poland. The culminating effect of all this must have meant several valuable months delay: but for this the rocket might well have preceded the flying bomb. We should have been subjected to a longer attack at shorter range (the rockets were never fired, as intended, from France), and our defences would have been worried by two kinds of attack at the same time.

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There can be no doubt that the Peenemünde raid was worth while.

The Flying Bomb

While we were investigating long-range missile development we found the flying bomb also being tried out at Peenemünde in competition with the rocket; it was a much more recent project, but was making rapid progress. Fortunately we obtained all the details of its performance before Christmas, 1943, and Bomber Command could take all the necessary neutralising action against the launching sites. We had sufficient detail to design fighter and A.A. defences, with the Americans specially making us some new predictors and fuses. The Americans told me that it was only possible to design these through the most detailed knowledge of the flying bomb's intended performance, and even with seven or eight months' warning they were barely ready in time, so great were the difficulties involved. But before the campaign ended they produced remarkable results.¹⁵

The Normandy Invasion

Before the flying bomb came into operation we were to have a great deal to do with the return to the continent, or as I preferred to call it, the reopening of the First Front. We had been looking forward to it for some time, our anticipation taking the form of hunting out all German radar stations, because we believed that it would be necessary to put them out of action before a successful landing. This locating of Ger-

¹⁵ Two U.S. radars were used in the UK against the flying bombs. One was the Microwave Early Warning Set, which was particularly suitable for the purpose because of its high power (and therefore long range), high discrimination, and multicontrol facilities. It served not only for early warning, but also, in conjunction with a computer or "predictor," for fighter direction. Between 29 June and the end of August 1944, 142 flying bombs were destroyed by aircraft under its direction. The other U.S. device heavily involved in the anti-flying-bomb operation was SCR-584, a gun-laying radar, available at all important AA batteries in the UK. This automatic-tracking radar was associated with a computer which integrated the radar data with other pertinent data on the AA guns, weather, etc., and provided the control or "prediction" data for the firing of the gun. SCR-584-equipped AA batteries brought down some 85 percent of all V-1's they engaged.

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man radar stations was one of our hobbies, and in all German-occupied Europe we found about 740 of them, leaving not more than six to be discovered by our ground forces. Between Dunkirk and Guernsey—the invasion area—there were 120 pieces of major equipment; we found them all.

Our belief that it was important to put these stations out of action did not appear to be shared by the invasion planning staff until very shortly before D-Day. Fortunately, when the decision to attack them was finally made, we had the necessary target dossier ready; it could not have been ready had we waited for a directive from the operational staff. This was just another case where intelligence had to anticipate operational needs. Considering the haste with which the operation was undertaken, its success was remarkable, and due mainly to the skill and courage of the rocket Typhoons of Nos. 20 and 22 sectors, whose accuracy in delivering attacks against such small targets was amazing. Barely more than 10 per cent of the stations were able to operate as D-Day broke, and these were so shaken that they fell easily for a spoof diversion to make the Germans think that we were landing east of the Seine. It has rarely been mentioned, if ever, that all this effort was entirely British.

On D-Day plus 7, as we had anticipated, the Germans launched the delayed and much reduced flying bomb attack. Once again, knowing the nature of the weapon, we were able to fix its likely line of production and supply. This led us to the Volkswagen works at Fallersleben, which was knocked out by the American Army Air Force; it also led us to the main supply depots in France. These were mushroom caves, mainly in the Oise valley. They were attacked by Bomber Command and the Americans; in one attack alone 298 flying bombs were irretrievably buried. During this period I was asked to take over all the intelligence concerning Hitler's retaliation campaign, mainly because it was temporarily realized that, once you had the technical details of the weapon worked out, everything else was easy.

The rocket followed the flying bomb in September, 1944, but not before we had its performance completely evaluated; in no point, technical or logistic, were we more than 10 per cent out, and generally very much closer. We were rather pleased

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with this because, as opposed to our own rocket experts' estimate of 80 tons total weight with a 10-ton warhead, we had predicted 12 tons with a 1-ton warhead. We were not believed, but events soon proved our figures. That is one of the satisfactory things about intelligence in war; you soon know whether you or your critics are right.

The Atomic Bomb

The atomic bomb was an interesting intelligence problem. In this we had to prove a negative case, one of the most difficult of intelligence exercises, for you have to make such a thorough search before you can confidently say that the enemy is doing nothing. True, we found the Germans doing something early on, which caused us to knock out the Norwegian heavy water production. This, in fact, as one of their experts told me, prevented them from doing the vital experiment which might have convinced them that the atomic bomb was possible. As it was, they decided that the bomb was not practicable and so finally did little about it.

L'Envoi

By way of epilogue, I should like publicly to thank my sources. There were thousands of them: secret agents at Peenemünde, in the German night-fighter control rooms, and on the flying bomb sites; photographic reconnaissance pilots travelling thousands of miles alone above Germany or diving down for a perilous oblique; girls in remote huts listening to German night-fighter radiotelephony; photographic interpreters ruining their eyesight through poring over photographs; aircrews in radio reconnaissance aircraft patrolling alone in the German night-fighter belt; technical officers sieving the earth around crashed German bombers trying to find the vital clue and trying to read the burnt documents; and many others. I, as their mouthpiece, had the limelight, but without them I could have done nothing. It is, as I said before, one of the tragedies that few of them get recognised, but we owe them much.

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STUDIES in INTELLIGENCE



VOL. 6 NO. 4

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Camera system research and engineering keep pace with intelligence demands upped from wartime low obliques to spy-in-the-sky reconnaissance.

THE STUDIES IN INTELLIGENCE AWARD

An annual award of \$500 is offered for the most significant contribution to the literature of intelligence submitted for publication in the *Studies*. The prize may be divided if the two or more best articles submitted are judged to be of equal merit, or it may be withheld if no article is deemed sufficiently outstanding.

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Awards will normally be announced in the first issue (Winter) of each volume for articles published during the preceding calendar year. The editorial board will welcome readers' nominations for awards, but reserves to itself exclusive competence in the decision.

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TECHNICAL FACTORS IN AEROSPACE PHOTOGRAPHY

John W. Cain

Aerial photography has been recognized since World War II as a prime means for acquiring intelligence; detailed analysis of the camera's faithful and permanent record of what falls within its view produces information of unusually high reliability. In recent years its product has been particularly valuable, and an insight into some of the technical factors involved in getting high-quality aerial photographs may be helpful to those in the intelligence community who make use of the resulting information.

In many respects intelligence aerial photography, for all its sophistication, is dependent on techniques and equipment which basically approximate those used by an amateur photographer. The same fundamental concepts and elements of procedure are present at both of these extremes of photographic acquisition. The amateur photographer taking snapshots from the window of a commercial airplane to some degree supplies by human judgment and manipulation many of the devices for improving picture quality which are mechanically incorporated into a complex aerial photographic system. He selects a lens of proper focal length to get identifiable images at the plane's height and distance from the subject. He uses a "haze-penetration" filter to sharpen the image by blocking off diffuse, non-image-forming light. He selects the right film for the results he wants and for the filters he uses. He insulates the camera from vibration by keeping it and his own body off vibration-transmitting elements of the airplane. He compensates for image motion by using an adequate shutter speed and by "panning" the camera in the direction of the motion.

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All of the factors which the amateur photographer, sometimes subconsciously, thus takes into account plus many more must be analyzed and provided for by mechanical or other means in an aerial camera system designed for intelligence acquisition. The system is particularly complicated if it is to be operated remotely, whether just out of the photographer's reach or many miles away. The value of the product will depend both on the quality of individual elements of the system and on how well opposing considerations are resolved in putting them into combination. In evaluating different systems an effort has been made to arrive at standard units of measure for the quality of their photography.

Measuring a System's Potential

Each major component of a camera system—lens, body, film, film-advancing mechanism, motion-compensation devices, etc.—contributes its own separate image degradation factors, depending upon its design. The way in which each is combined with the others, considering their individual and joint performance under dynamic conditions, determines the quality capability of the system. Many of the elements determining the ultimate image quality of which a camera system under design will be capable are subject to objective measurement, but some aspects of performance can be learned only by trial. The most important criteria include the following.

Photographic resolution. The most generally used measure of photographic resolution is the number of lines per millimeter distinguishable on the film. A photographic line is actually a pair of lines, one black and one white or, more correctly, one of a given photographic density and one formed by the space between it and the next line. The number of these line-pairs that can be separately identified and counted within one millimeter, under any amount of magnification, on the exposed and processed photographic material constitutes one measure of the end quality of the photographic system used. Until quite recently these counts were for the most part made subjectively, and wide ranges of resolution have consequently been reported for the same type of material. Unless the test was made by photographing a prepared "resolution target" whose smallest line separations were a challenge to the system's resolving capability, accurate resolu-

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tion figures for high-quality photography were difficult to obtain. Electronic devices to measure resolution more accurately have recently been designed and are now being calibrated by the U.S. National Bureau of Standards.

Acutance. Photographic acutance, or image sharpness, is measured by the linear distance on a piece of exposed and processed photographic material between the end of an area of one density and the beginning of an area of another. A combination of film, exposure, and chemical processing which permits transition between two levels of density over an extremely short distance is one which will produce sharp or high-acuity photographic imagery. This is a quality measurement which can be made objectively with the aid of a microdensitometer. Density is defined in terms of the light transmission (or reflection) characteristics of the chemically developed photographic material. The transparency index is the ratio of the amount of light passed through the material to the amount of light falling on it. Opacity is the reciprocal of the transparency, and density is the logarithm of the opacity. For example, if one-tenth of the incident light is transmitted through a piece of material, its opacity is ten and its density is one.

Granularity. The light-sensitive emulsions used in all manner of camera systems are generally, even today, of the conventional silver halide variety. After exposure to light and chemical processing, silver is deposited in granules to form the opaque areas of the negative. The emulsions which are the most sensitive to light exposure—the fastest film—are the ones which form the coarsest silver granules when chemically processed, and those which are slowest in image formation on exposure to light form the smallest granules when processed. Obviously, it is desirable in a high-quality camera system to use a film which forms the finest possible silver grains consistent with the amount of light available for proper exposure; the compromise that has to be made between speed of exposure and granularity is governed by the ambient light conditions expected during the exposure period. Granularity is a factor which can be objectively determined as a measure of film quality.

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Tonal range. All photographic materials can be measured to determine their tonal range, the number of discrete image densities or gray tones they can record. Since normal photographic scenery consists of a variety of colors, as well as textures and tones, it is important that black-and-white photographic material separate these in as wide a range of discretely different shades of gray as possible. A high-quality photographic film is expected to record a sufficient variety of gray shades that the human eye, which can distinguish among a large number of barely different shades, will interpret the photograph as an accurate representation of the scene.

Scale. Though scale is not a quality factor determined by camera system components alone, it is certainly one which affects the information potential of aerial photography. It can be objectively measured, being nominally the quotient of lens focal length by distance to the subject. The design of modern reconnaissance cameras, however, precludes such a straightforward determination of scale. In the panoramic aerial cameras now used in order to increase lateral ground coverage the picture is projected onto the film by a rotating lens or prism, and the scale changes constantly in a complex geometric pattern. It can be calculated at any point only by experienced photogrammetrists using sophisticated procedures.

Ground detection size. During the past several years this term has become a common means of expressing the quality capability of an aerial camera system, but differing definitions are given to it. Although the minimum size of object whose image can be detected on a film can be determined accurately with relative ease, the question is whether detection or recognition is the criterion. On purely physical grounds a detectable image must be at least as large as the width of one line-pair, the limit of the material's resolution capability, but an image of minimum size would be formless and unrecognizable. This physical minimum has been used as a starting point, however, in attempts to arrive at a figure for the number of line-pairs defining the minimum size required for identification of an image through its shape and dimensions. Different photographic scientists have set various figures for this,

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ranging from 2½ to 10 line-pairs. If then a camera system can produce a resolution of 100 lines per millimeter, a density change covering one-hundredth of a millimeter could be detected, but the image would have to have dimensions from 0.025 to 0.1 millimeter before its shape could be determined, its size measured, and the object it represented recognized. A four-inch object photographed from 10,000 feet at a focal length of 1 foot could just be detected; estimates of the dimensions that would be required for recognition range from 10 to 40 inches.

Volume. The square footage of film which can be carried during a photographic mission is an important determinant of the total information potential of the camera system. The film width used by a particular camera system is generally determined by the type of camera and the characteristics of the lens. The length of film required for the amount of ground coverage desired is subject to the weight and space limitations of the camera-carrying vehicle.

Weather. Clouds and atmospheric haze are a factor to be reckoned with in estimating a camera system's net information-producing potential. The scattering of light by haze lowers photographic resolution by reducing image contrast. A camera system giving a resolution of 100 lines per millimeter in high-contrast imagery (density ratios on the order of 3:1, or 1000:1 contrast in opacity) will give only a fraction of that, say as few as 50 lines, in low-contrast imagery (densities on the order of 1.02:1). Timing of aerial photography missions for the best seasonal and daylight hours with the help of the best weather forecasts to be had is the only means available to counter this factor.

Twenty Years' Refinements

The quality of the aerial photography done for intelligence purposes today is at another order of magnitude than that found acceptable twenty years ago. In the measurement most often used for image quality, the resolution given by the camera systems of World War II averaged about 20 lines per millimeter, and this was good enough to meet wartime requirements with the camera-vehicle techniques employed. Today camera systems are producing photographic resolutions on the order of 150-175 lines per millimeter. Engineer-

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ing analysis indicates that an operational capability of 200 lines per millimeter is quite feasible for the near future. Extrapolation from this extremely rapid improvement, which would have been unbelievable if predicted twenty years ago, leads photographic scientists to believe that resolutions on the order of 600 lines per millimeter will be achievable within the next five years. With the imposition of serious intelligence requirements for more and better aerial photography, the photographic industry's scientists, given sufficient time and relatively unrestricted financial support, have always produced the necessary technology. There is no apparent reason why this progress should not continue.

Thus the tremendous gains in photographic quality are the result of requirements for intelligence extremely difficult, if not impossible, to collect by other means. During wartime operations intelligence mostly of a tactical nature was provided in large amounts through comparatively close-range aerial photography. In peacetime, and especially in the recent years of nuclear equipoise, the emphasis is on strategic intelligence requiring much broader photographic coverage, and at the same time the camera vehicles are excluded from close range to their target areas. Substitutes for short-range photography had to be found.

One might think that new techniques to compensate for the forced increase in range would center on increasing the focal length of lenses. As the focal length is increased, however, the lenses become extremely large, and because of weight and space limitations in the vehicles researchers had to seek improvements in other areas. While the camera designers were improving their film-handling mechanisms, as described below, the film industry was researching light-sensitive materials of ever higher quality. With significant technological advances in this area, the crux of the problem shifted back again to the lens designers, who now had to devote their attention to making lenses which would transmit the larger amounts of light required by the inherently slower emulsions of extremely high quality.

Since the basic means of getting more light transmitted through a lens is to increase its diameter, here again was the problem of increased size and weight. One way of alleviating

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it was found to be lens coatings. Though the familiar f /number describes the nominal transmission characteristics of a particular lens, in aerial cameras a more definitive "T-stop" figure is used, which takes into account the light losses by absorption in the glass and reflections at the air-glass surfaces. An $f/3.5$ lens, for example, would have with surfaces uncoated a T-stop value of 4.1, but this could be increased to T/3.7 by treating the glass surfaces with an anti-reflective coating. The effect of the coating is equivalent to an increase in diameter from 5.8 to 6.4 inches for a lens of 24-inch focal length without significant increase in weight.

Camera, lens, and film producers thus worked together quite closely to insure that technological breakthroughs in one area would be matched by parallel improvements in others. Especially important has been the fulfillment of the requirement to provide large volumes of photographic coverage while maintaining camera and film weights at a minimum. The use of thinner, yet stronger support material for photographic emulsions has in recent years about doubled film footage per unit of weight. At first, however, this innovation created serious problems for the tracking and movement of the film within the camera, and novel techniques had to be found for guiding the very thin films through the maze-like paths of sophisticated reconnaissance cameras.

For example, thin-base films cannot be edge-guided by the use of flanges on rollers. Precise alignment of all of the lengthy film paths is therefore required, and this now can be accomplished by self-leveling rollers which sense any lateral movement of the film and provide constant corrections. When 45°-rollers used for right-angle turns of film hypersensitized it by their pressure and produced fogging, it was found that air forced through the porous material of sintered metal rollers would permit the film to "float" around the corners without contact. Space requirements for film have been further reduced by space sharing between supply and take-up storage. Normally when a supply spool is full the take-up spool is empty, but empty or full they require the same amount of space. New spooling techniques have now been developed which permit film to be rolled on a flangeless supply

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core, which can be placed close to the take-up spool with the full roll protruding between its empty flanges.

As each separate problem was encountered and surmounted, additional improvements in other areas have necessitated continuing research and development. Even as this is written, laboratory experiments are being conducted with film bases comparable in thickness to the cellophane on a cigarette package, about one-half as thick as those currently considered thin. Indeed, the coatings of light-sensitive emulsions may soon be thicker than their supporting base. The advantage of such films in increasing area coverage potential is obvious, but the problems they create for camera drive mechanisms and automatic chemical processing equipment are a serious challenge to their design engineers.

The evolution of radical techniques in lens design as a result of the newly produced high-resolution film emulsions has been greatly helped by the advent of electronic computing capabilities. Where weight and space have imposed severe limitations on the use of large refracting lenses, a switch to optical reflectors has been given serious consideration. In the midst of this, the dimensional stability of the new thin film bases is challenging the lens manufacturers to provide optics that match them in preserving the geometric fidelity of the imagery.

Such has been the story of progressive improvements in aerial camera systems' components, all made in an attempt to provide a close-up look from distant camera vantage points. As operational limitations are continually increased, pictures will be taken from even farther away. And since the same or even higher quality will be required, research and development on aerial intelligence camera systems will continue to be sponsored at a commensurate pace.

The case against Soviet scientific visitors in weapons-related fields.

UNFAIR EXCHANGE

Amos K. Wylie

A recent article in *Aviation Week and Space Technology*, a McGraw-Hill publication,¹ reads in part as follows:

The United States is launching a number of optical maser lethal-weapons programs which may lead to entire families of revolutionary new weapons, possibly including a fast, "clean," non-nuclear defense against ballistic missiles, by as early as the middle of this decade. . . .

The optical maser radiation weapon will have far broader implications than ballistic missile defense alone, although the latter is the prime need. In space, beyond the attenuating and scattering effects of the earth's atmosphere, power requirements might be sharply reduced, and with device refinements, weapon devices made small enough to be carried on inspector satellites or larger space vehicles as anti-satellite or spacecraft defense weapons.

As an anti-personnel or anti-tank weapon the device would be useful, but, some industry sources speculate, is roughly like shooting pheasants with an elephant gun. Nevertheless, these applications are being investigated by Army agencies such as Frankfort Arsenal. Setting up a defensive curtain through which neither man nor machine could pass may also be a distinct radiation weapon possibility.

A similar article entitled "Light Ray"—Fantastic Weapon of the Future" in *U.S. News and World Report*² says of lasers:

Authorities see the US in a race with Russia for a radical new family of important weapons. It is a race that could have far-reaching effects in the years ahead.

These articles provide a valuable background for consideration of the recent visit to the United States of Yuriy Mikhailovich Popov, a senior scientist at the Institute of Physics *imeni* P. N. Lebedev, under Article 3 of the Exchange Agreement between the National Academy of Science and the Academy of

¹ "U.S. Begins Laser Weapons Programs," by Barry Miller. March 26, 1961, pp. 41, 43, 45.

² April 2, 1962, pp. 47-50.

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Sciences of the USSR. He was scheduled during his tour to conduct research at Harvard University, visit MIT, Columbia, California Institute of Technology, and the University of California, and attend meetings of the American Physical Society in New York.

Two revealing scientific comments on Popov and his visit merit the particular attention of the intelligence community. The observations of a Professor of Electrical Engineering at a major U.S. university, a specialist on lasers, concerning Popov's week-long visit to his laboratory in February 1962 are as follows:

Yuriy Popov is a "maser-laser man," all right. This is his own description of himself . . .

Popov said the Institute [Lebedev] has a ruby maser. This would mean they have at least one. They are extremely interested in its properties for burning up materials—for destruction, Popov said, adding that he was fascinated with a maser he had seen in the US which could burn through six razor blades. His ruby maser apparently cannot do this.

With respect to the use of lasers for destruction, it is my opinion that within five years it will be possible to have a laser ray capable of destroying an ICBM in flight. Of course, I did not discuss this opinion with Popov, but I am sure a man of his technical sophistication has this possibility in full view . . .

I conclude that Popov is in the US to learn as much as possible about our laser work, in particular . . .

Popov is 32-33 years old, and seems to have the sort of drive I would associate with an ambitious guy. His English is very good. He has a large vocabulary. He can even pick up subtle meanings . . .

The other comment was offered by a physicist, a member of the technical staff of a large U.S. research organization, after meeting and having dinner with Popov.

In the past I have met and conversed with many Soviet scientists but never have I met one so corrupt and Communist indoctrinated as Dr. Popov . . .

Dr. Popov is a shrewd and intelligent man. Even though he was relaxed, he was difficult to draw out and was cautious about making any definite statements. He was also very cynical in attitude, saying in essence, "We know more about you than you do about us. You can't learn anything about our work. On the

other hand all we have to do is come to your country and buy all the technical information we need." (Here he was referring to the open sale of technical publications.) He was probably instructed to absorb as much information as possible before returning to the USSR because he read continuously while here all the latest publications on masers and lasers and any other material akin to this field . . .

During our conversation, Dr. Popov said that he wanted to obtain [purchase] some US manufactured ruby crystals. I asked him why. He said that those of the US were superior to those made in the USSR. He said he was also interested in purchasing a US manufactured laser unit. He then asked me about a new device called the Golley Cell, used for infrared radiation. Evidently the Soviets neither have such a device nor the literature thereof and he wanted to learn something about it. However, rather than ask me outright how the cell was constructed he asked what the parameters of the cell were. I told him I didn't know . . .

The scientific exchange program is a fine idea. But in my opinion, the Soviets are probably gaining more from it than we are. In the case of Dr. Popov, he tried to learn everything he could and from what I could ascertain, stuck his nose into everything. He visited some of the centers of our maser and laser research and will probably take some valuable information back to the USSR. His knowledge of up-to-date US maser and laser data was rather embarrassing. As I said, he read everything that he could on the subject and in some instances was better informed on the subject than I.

Dr. Popov had nothing but praise for the Communist regime. To him, Stalin and Khrushchev are both great men . . .

Was Yuriy Mikhailovich Popov's visit to the United States in the national interest? To ask the question is to answer it. He was an agent of our principal adversary assigned to collect all the information he could on our work in a field basic to revolutionary new weapons. He apparently met with considerable success in his mission, and he is now back in Moscow using the knowledge he gained in the United States to help the USSR win the race to develop the laser into an effective military instrument. Moreover, with the knowledge he gained in the United States he is in a position to help the Soviet espionage effort targeted on any future classified developments in U.S. research on the laser.

Is this an isolated case of a Soviet scientific visit injurious to the United States? Considering the history of the USSR and the Communist philosophy, it is clear that the Soviet

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Party and Government would never permit a Soviet scientist to come to the United States unless it thought that the visit would promote the achievement of ultimate Soviet objectives. Admittedly one of these objectives is the elimination of our political and social system. It therefore follows that each visiting Soviet scientist must be assumed to be an agent, subject to the continuing control of the Soviet state and the CPSU, who has been carefully briefed to obtain while in the United States scientific intelligence of maximum value to the USSR. What happens if the agent should seem not sufficiently amenable to Party discipline while in the United States is illustrated by the sudden departure on 23 October 1961 of the Soviet chemist Oleg Nikolaevich Pirogov from this country. The circumstances of his abrupt recall, ostensibly because of a family emergency, have been said to center on the fact that Pirogov's most outstanding trait was his utter disdain for the Soviet political officials at the office of the USSR Mission to the United Nations, 680 Park Avenue, New York City.

Soviet scientists in the United States are not under U.S. police surveillance. The great majority of them can speak English adequately and read it with ease. They are in most cases seeking information in fields in which we are ahead of the Soviets. And we have no law prohibiting our scientists from imparting knowledge and techniques to their scientific colleagues from the USSR unless they have been formally classified by some competent agency of the government.

Many Soviet "students" who come to the United States under so-called student exchanges are not undergraduates, but mature graduate students or teachers capable of learning the latest U.S. advances in research and development in their respective fields. Oleg V. Roman, for example, who is a teacher in the field of powder metallurgy at the University of Minsk, where he has 30 or 40 people working under him in his laboratory, has recently, under the student exchange program, conducted research in powder metallurgy at the Rensselaer Polytechnic Institute, attended the annual meeting of the Metal-

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lurgical Society of the American Institute of Mining, Metallurgical, and Petroleum Engineers in New York City, attended a U.S. powder metallurgy conference in Philadelphia, and taken part in a meeting arranged by the Metal Powder Industries Federation between U.S. powder metallurgists and the Soviet powder metallurgists I. M. Fedorchenko and Yu. M. Semenov. The report that he writes when he returns to the USSR, together with his debriefing by scientific intelligence officers vested with the full coercive power of the Soviet state, should provide a substantial contribution to Soviet scientific intelligence in the field of powder metallurgy. To assume otherwise is to be unrealistic and to ignore dangerously the existence of the cold war.

These considerations create a presumption that the great majority of visits by Soviet scientists to U.S. research laboratories, universities, and technical institutes are contrary to the national interest. Is this damage to the national interest exceeded by the benefit derived from information U.S. scientists acquire on exchange visits to the USSR? Here we have the converse considerations.

U.S. scientists visiting the USSR are not under government direction and control. They can be selected only from among volunteers. Many of them feel their primary mission to be the advancement of science for the benefit of all mankind. The majority can neither speak nor read Russian. The majority are knowledgeable in fields in which Soviet science lags behind the U.S. Their visits are made under rigid Soviet controls; they see only those installations and talk to only those scientists designated by the Soviet state.

Moreover, Soviet scientists are subject to trial by military courts, even though they are civilians, and to punishment for military treason if they disclose state secrets,³ a crime punishable ordinarily by execution and confiscation of all property. One of the most notorious provisions of Soviet criminal law is the doctrine of analogy, which permits a person to be punished for a socially dangerous act not directly prohibited

³ *Soviet Military Law and Administration*, by Harold J. Berman and Miroslav Kerner (Harvard, 1955), p. 73.

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by law but analogous to a prohibited act.⁴ Under the law of June 9, 1947, servicemen who disclose, whether through negligence or by intent, military information constituting a "specially-to-be-guarded state secret" are punishable by imprisonment in a corrective labor camp from ten to twenty years. In an accompanying decree such protected military information was defined to include practically all conceivable types of information bearing not only upon military plans and operations but also upon the physical and economic reserves of the State (including "human reserves subject to mobilization"), war industry, and technical means of defense.⁵

Finally, some U.S. scientists are reluctant to cooperate with U.S. intelligence officers seeking foreign scientific intelligence. A recently published letter⁶ by Patrick D. Wall of the Department of Biology at the Massachusetts Institute of Technology reads in part as follows:

On 24 January I was visited by a representative of the Central Intelligence Agency. He asked me for information about the direction being taken by certain foreign scientists in the field of neurophysiology. I felt I should not give him this information, I discussed my reasons with him, and he left. . . . if a colleague had asked me the CIA questions I would have replied without hesitation . . .

It is proper that representatives of U.S. agencies seeking foreign intelligence in peacetime should not be vested with coercive powers, but does anyone in touch with reality suppose that their counterparts in the USSR do not have at their call the full coercive power of the state?

These opposing sets of conditions lead to a strong presumption that any exchange of visits by U.S. and Soviet scientists, at least by those whose fields are related to the development of new military weapons, will result in a net intelligence gain for the USSR. It would therefore seem that those who advocate continuing an exchange of visits by scientists specializing in lasers, automatic control, acoustics, solid state physics, nuclear physics, computers, and other fields related

⁴ *Ibid.*, pp. 69, 70.

⁵ *Ibid.*, pp. 83, 84.

⁶ "Letters—Scientists and the CIA," *Science*, 13 April 62, p. 173.

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to new weapons should come forward with specific, detailed, reliable evidence to prove that the majority of such exchanges have in the past brought a net intelligence gain to the United States. No evaluation I have seen reaching this conclusion about a particular exchange has contained such supporting evidence.

The argument is advanced that Soviet scientists learn little by visiting the United States that they could not learn from the published scientific literature. But each visit by a Soviet scientist puts the Soviets in a better position to exploit the literature. Moreover, it is obvious a Soviet scientist like Y. M. Popov will be always probing the grey area where unclassified scientific data borders on classified information and will continually try to acquire classified information or leads as to where it can be acquired. It is his duty as a good Communist to do so.

Another argument which I believe is used by proponents of these exchanges is that if Soviet scientists are permitted to come to the United States and visit U.S. universities and research institutes they will go back to the USSR with a true picture of the United States which they will spread among their acquaintances, and the result will be that the image of the United States as a degenerate, aggressive, selfish society projected by the Communist Party will be replaced by the truth. The fallacy in this argument is that it ignores the careful screening process that must take place before a Soviet scientist is permitted to come here. Surely the disciplined and purposeful CPSU is not going to permit a scientist to come to the United States if it can foresee that he might act in a socially dangerous manner on his return. Furthermore, if it is desired to convey a true picture of the United States to the people of the USSR, cannot this objective be accomplished through visits by Soviet authors, poets, singers, or athletes, who will not carry back also items of scientific intelligence to build up Soviet military might?

I would be happy to read in this journal an answering article in support of the proposition that exchanges of visits by U.S. and Soviet scientists in fields related to the development of new weapons are in the U.S. national interest.⁷

⁷ Such an article is under consideration for a future issue.

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*Progress report on the creation
of an integrated machine file at
the Air Force Intelligence Cen-
ter for all raw data of all types.*

AN IDIOT SYSTEM FOR INTELLIGENCE

Harry Hopkinson

The Air Force Inspector General, in February of 1962, remarked that "a serious weakness in our system permits individuals, without proper training and experience, to exercise judgment beyond their capabilities." He was talking about the Air Force, not intelligence, but do we in intelligence occasionally see a glimmer of this truth breaking up through our own silver-lined cloud layer like a forming thunderhead? Armed forces world wide all have a bit of the idiot system—rules prescribed by geniuses for idiots to follow—built into their normal operating procedures, for good reason; and it may be that something not quite the same but analogous to it has a place in the collation of raw intelligence data.

Intelligence analysts are not likely to be idiots, but many are apt to be a little parochial, a little myopic beyond their particular specialties and resources. This is an occupational infirmity generally inflicted on them by a workload that forces them to confine most of their efforts to data files readily accessible from their desks, files limited by type or source or security classification of the data. Let us examine some case histories that show the infertility of such partial, separate, uncohabitant files.

The MK Numbers

Many years ago, for a number of apparent reasons, the Russians put the clamps on the individual enterprise then exercised in the procurement of foreign books, periodicals, and other publications and set up Mezhdunarodnaya Kniga (hereinafter referred to as MK because it is so hard to spell) to act as the official procurement agency for Soviet organizations. In a bureaucratically efficient manner, they devised a form and a numbering control system, assigning an individual number to each major organization in the country, which

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then assigned a sub-number to its own organizational elements, who in turn assigned a third, sequential number to each order as it was prepared. MK also assigned a number to each foreign country and a second number to its procurement agency there. In the United States this agency is the Four Continent Book Store at 822 Broadway in New York City, with a miserable staff plagued on the one hand by internal bickerings and union troubles and badgered on the other by MK and the Soviet Embassy for doing a poor job. It is a registered Communist organization, headed at the time of interest to us by a chap named Allen Markoff, unhappily making a living the hard way.

Book orders, typed at the local level in the Soviet Union, wend their way up to MK, where they are dispatched in triplicate to the appropriate foreign collection agency. Those for the United States were all sent to Four Continent, who took action by sending two copies of the form (plus a couple of its own dealing with billing and payments) to the appropriate publisher or subscription agency, the Government Printing Office, or other source for procurement.

In 1957 an Air Force Intelligence Center analyst, looking for new sources, started collecting these forms through the GPO and the FBI. The data, including the identity of the Soviet organizations that originally placed the orders, were put on IBM punched cards. Many of these identities were somewhat obscured by the use of Post Box addresses without any organizational name, but their assigned organizational numbers required by bureaucracy were helpful not only to MK but also to our analyst. Periodic machine runs of various sorts were made to determine the primary interest, as expressed in the orders for source material, of the various organizations.

At about this time the Ministry of the Aviation Industry (MAI) underwent a reorganization, changing its name to the Committee of Aviation Technology and acquiring a new street address, but not changing its assigned MK book order number. If the latter had not been enough to identify the new organization as a replacement of MAI, an analysis of the typing by the FBI laboratory in Washington established that the same typewriter had been used to prepare some of the

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book orders under the old name and some from the new outfit. Russian reorganizations are assumed to be similar to our own: no matter how the organizational boxes are shuffled, the same functions generally continue to be performed by the same people with the same old equipment.

The edge was taken off the sweet taste of accomplishment in this identification by a Soviet public announcement of the organizational change in question. Not announced, however, was the fact that after the change the Committee acquired a marked interest in missiles, as evidenced by a small flood of book orders for such items as "The Mechanical Aspects of the Vanguard Flight Control System," "Re-entry of Spherical Bodies into the Atmosphere at Very High Speeds," "Redstone Arsenal Ballistic Ramp," "Effect of Air Drag on Elliptic Satellite Orbits," and hundreds more in the same vein.

So far so good. But in 1958 this enterprising analyst was transferred, and the effort ceased. It was picked up later elsewhere as the maintenance of a distinct category of data, the CIA Book Order File; but who has used this or will use it as a separate file? The identification of those mysterious Post Box numbers can be accomplished only by systematically playing this unclassified, open-source material against other files of a completely different nature and classification which might appear to contain altogether unrelated data.

Coolers, Arsenal, and Elephants

Some years ago a trainload of air coolers was shipped to Ashkhabad on the Russian-Iranian border. An intriguing fact. A carload wouldn't have bothered; but a trainload? What could the Turkmen slope-heads do with this amount, since they do not afford themselves the luxury of individual air conditioning? So far as I know, no one ever found the answer; and the reason no one did is that there was no clue to tell which files of the multiplicity maintained in the intelligence community one might search next for any possible associated activity. And if there had been, no one would probably have had time to undertake it anyway. Nor would it generally be possible for a machine-type custodian of 25 or 35 varied automated files to suggest a particular two or three to be searched to shed light on this anomaly. As a matter

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of fact, the file that produced the anomaly itself is one associated neither with Ashkhabad nor with air coolers, but one concerning a different subject entirely and an unlikely place to find such an item at such a time.

The inexplicable installation at Mozhaysk, a word to produce tarantism in some people even today, was an unusual example of complete frustration. We had excellent photo coverage of the thing—all that could be asked for, one would think—yet never in the history of intelligence has so much labor been expended on a single question as on the search of *all* files, manual and machine alike, in the endeavor to discover what this was. Every existing information file was milked not once but many times by different searchers; but one wonders whether, if a single homogeneous group had been able to conduct an integrated search of all of these files, scrutinizing each fact in relation to all other available data, it would have taken some three years to reach an agreed solution.

It would perhaps be an exaggeration to say that we handle raw intelligence information today in the same way it was handled by the Union Army during the Civil War, but in a sense this is not far from the truth. Indeed, we might go back even as far as Hannibal and reflect on our resemblance to the Roman Scipio, trying to establish the operating characteristics of the African elephant from scattered and unrelated reports. And speaking of elephants, Aesop's fable of the seven blind men is a classic example of compartmented intelligence—and recommended reading for all.

The Unifile

There is no disagreement that the increasing masses of data, the excessive demands on available manpower, the need for increased speed in reaction and analysis, and the exploding technology of weapons systems all add up to a pressing need for automated data handling. To stop short with the application of this forward step to separate files, to be operated or queried individually, would be a grave error. The habits, training, operating constraints, and environment of today make the establishment of an idiot-proof, single-query, single-search type of raw data file the minimum requirement

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for automated data manipulation, and an even more critical necessity for the high-speed intelligence analysis and synthesis of the future.

In 1960, following years of contractual probings aimed at designing a complete intelligence data handling system, with no tangible results except a very liberal education for certain personnel of AFIC, an ambitious concept was born, and an important decision was made. The concept was an integrated, complete raw data system using in combination the IBM 7090, the AN/GSQ 11A (Minicard) document retrieval system, and the photo-handling equipment of the now defunct subsystem I of a proposed satellite program. The important decision was to perform the systems design in-house, utilizing contractor personnel only for detailed design and programming under the strict direction of AFIC personnel. After years of pie in the sky, always associated with a requirement for literally hundreds more people, this was an attempt to get on with the job while keeping at least one foot on the ground.

The *modus operandi* was the establishment of an ad hoc committee known as the Information Exploitation Group, composed of four full-time people selected because of their ingeniousness and backgrounds of experience in both intelligence analysis and electronic data processing. With the help of in-house systems designers, programmers, and indians and chiefs of assorted experience, they were ready at the end of ten months (under some pressure) to start building what they called the Duplex Unifile System. This system was to provide not only for processing new information on an all-source basis, but also for storing and handling information previously indexed and machined by other organizations, so that a sort of instant library in depth might be achieved rapidly. It had to have growth potential, be sufficiently flexible to shift with the advent of new equipment, and be redirectable to handle presently unanticipated problems.

A babel of machine codes has developed in the intelligence community, and not even transliteration of the Russian language is standard. It was necessary to design a computer record format of universal character, one that could accept any existing machine-readable file. Conversion programs would be prepared to put into this Unifile all the various

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acquired files and subsequent material up-dating them. The consolidation would create an electronic file unprecedented in scope and depth, an instrument for correlating all pertinent available data regardless of its class, source, or security classification.

The universals of Unifomat are the three basic elements which are repeated in all files regardless of format—*Identifiers* (people, places, and things), at a *Location*, in *Time*. With an added provision for the expression of interrelationships among these three, all information can be adequately represented by them, and the system is intrinsically suitable for machine manipulation, document retrieval, and photographic records. In connection with the latter, a Unifile P.I. Report was designed and is currently in operational use in the Air Force, serving as the photographic intelligence input to both the 7090 and the Minicard system.

During the development and conversion stage, duplicate files have been supplied to us by our very cooperative fellow-members of the intelligence community, including the photographic intelligence files in NPIC, several CIA registers, special intelligence files from NSA, some selected sensitive files from FTD, ACIC photo data files, and several 438L-developed files from SAC.¹ By the end of the year 25 files now scattered geographically, organizationally, and by security barriers, comprising two and a half to three million records, will have been merged into Unifile.

Computer programming for data correlation—the end objective of the development—has already been initiated. An analyst will be able to query all these manifold sources at a single stroke. But the computer will not wait idly on the analyst's initiative: under a "trigger" program being developed it will keep searching the Unifile to detect the convergence of indicators of target activities—long-range missile sites, nuclear weapon storage facilities, etc. When the sum of evidence of such an activity crosses a threshold value, output will automatically be triggered, giving a hypothesis of the

¹ The last three abbreviations stand for the Foreign Technology Division of the Air Force Systems Command (successor to Air Technical Intelligence Center), the Aeronautical Chart and Information Center (at St. Louis), and the Strategic Air Command.

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existence of the activity and a statement of the evidence supporting the hypothesis. Stringent tests of the programming are planned, and before winter's end we will have completed our universal research instrument—or at least will be within revision distance of it.

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A Jules Verne look at intelligence processes in a coming generation.

SOME FAR-OUT THOUGHTS ON COMPUTERS

Orrin Clotworthy

Question: What does the size of the next coffee crop, bull-fight attendance figures, local newspaper coverage of UN matters, the birth rate, the mean daily temperatures or refrigerator sales across the country have to do with who will next be elected president of Guatemala?

Answer: Perhaps nothing. But the question is not a frivolous one. There must be a cause behind each vote cast in an election. It may be a rational, emotional, superstitious, or accidental cause. The choice may derive from months of conscious effort to weigh the pros and cons of the aspirants to office. It may be an automatic, tradition-bound action that requires not even a cursory exercise of the thought process. Or the voter himself may not recognize why he decides as he does. But something will motivate him, and it may be closely correlative with one or more of the quantitative factors suggested in the opening question.

To learn just what the factors are, how to measure them, how to weight them, and how to keep them flowing into a computing center for continual analysis will some day become a matter of great concern to all of us in the intelligence community. I say "will" rather than "may" because it seems to me that this type of election analysis will be only the first faltering step by an infant quantified behavioral science that is going to be forced on us for its upbringing like a doorstep baby—and soon.

Instant Estimates

For elections offer a fairly simple starting point. They deal in tangible, discrete, measurable data—ballots. Ideally they reflect the attitudes of a populace, not just toward a handful of candidates but toward a host of related issues. Although in practice we have to compensate for incomplete

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voter participation, ballot-box stuffing, and other imperfections, means will be found to make such compensations and we will still wind up with good readings on popular attitudes at a given moment in history. Elections are in a sense history's benchmarks to which we can, and do, refer back when preparing estimates of public opinion in the long periods between them. They are also buoys to keep the analyst on course, a regular means of validating his estimates. When his prediction of an election outcome turns out to be way off target, he can find solace in that old Cape Canaveral philosophy, "We learn more from our failures than we do from our successes."

Note that what is proposed is to bypass the voter himself in this analytic process, looking beyond him for the reasons underlying his decisions. As the pollsters have discovered, even in an enlightened, democratic society it is not a simple matter to develop accurate election predictions from a sampling of the electorate. In an underdeveloped or overpoliced state of the type that we in intelligence are so often concerned with, the additional problems of obtaining a valid sample of opinion through direct interviews are so immense as to force us to more subtle methods. Isolating the factors that influence popular attitudes in a given area at election time would be one approach.

Once we had succeeded in isolating these factors, could we not then begin to watch the key phenomena continuously, gathering them in and collating them so that at any instant we could read from them the temper of the populace under study? Ten years ago, the answer would have been negative. Today, because of the tremendous strides that our technologists have made in electronic data processing, it is decidedly affirmative. The required mathematical computations and sophisticated statistical analysis are well within the present state of the computer art.

Molecules and People

Where we lag is not in processing technology, but in the behavioral science "laboratories," where only the faintest of beginnings have been made in the application of physical science techniques to the study of societies. We are doubt-

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less years away from the knowledge of causes and effects that will permit us to predict mass human behavior with real confidence. Yet there is rising optimism among scholars that we will some day be able to foretell the behavior of large groups of people within reasonable limits, given accurate and timely measurements of certain telltale factors. A single person, they submit, follows an erratic course, just as a single gas molecule does. But when you put enough people together many of the individual erratic actions will cancel each other out and there will emerge a collective behavior that can be formulized. To be sure, what comes out is not likely to be so simple and aesthetically satisfying as Boyle's law for the isothermal pressure-volume relation of an ideal body of gas. Mass cause-and-effect relationships are more elusive for people than for molecules. But they must be there, somewhere, and scholars are looking for them.

The impact of new breakthroughs in this area upon the intelligence business is interesting to contemplate. Possibly some American discoveries in mass human behavior patterns could be kept secret for long periods to permit our unilateral exploitation of them. Let's imagine, for example, that we discover an extremely high correlation between Tito's popularity among the Yugoslavs and the consumption of slivovitz in that country: when per capita absorption goes up, his stock goes down. As long as we are aware of this and he is not, we will find it profitable to collect precise data on boozing among the Yugoslavs. To keep our interest undetected, we resort to clandestine collection techniques, because once he learns of it and knows the reason why, he can adopt countermeasures, for instance doctored consumption figures. The variations in this game are endless.

What Makes Sukarno Run?

While one group of researchers, largely sociologists and political scientists, pursues the gas molecule analogy, a more visionary one will be exploring possibilities with certain individual molecules. Can scientists ever simulate the behavior pattern of a Mao Tse-tung or a Sekou Touré? Theoretically, if a man's importance warrants it, they should be able to reduce to mathematical terms and store in an electronic mem-

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ory most of his salient experiences and observed reactions to varying situations. Subjecting this stand-in brain to a hypothetical set of circumstances, they could then read out his probable reaction to the event hypothesized. Here the storage problem alone would be tremendous. Even greater would be the task of teaching the computer to ignore certain stimuli while responding to others. As you read this article, you are able to disregard the noise of the air conditioner nearby. It will be some time before a machine can be taught to distinguish between the relevant and the irrelevant in even this elementary fashion. Still, by say the year 2000, I wouldn't bet against it.

On another level, at any rate, much can be learned through comparisons of what national leaders say in their public pronouncements and what they subsequently do. The more sophisticated our techniques for content analysis become, the more we will be obliged to turn to electronic data processing for help in correlating statements with actions. This could be made an operationally practical method pending the hoped-for development of a stand-in brain: virtually *all* of the research data for content analysis can be obtained with relative ease, and the fact that content analysis deals with objective observations obviates the monumental task of synthesizing someone's subjective thought processes.

Your Move

Another application of computers to the intelligence business lies in the field of gaming. The Air Force has been experimenting for years with a mock-up of the strategic air battle, using a computer to simulate the clash between a surprise intercontinental air and space assault force and the defensive and counter-strike resources of this country. Not only are the planned aspects of both contending operations simulated; so are the unexpected or accidental factors such as weather, faulty intelligence, weapons and guidance imperfections. While these games are of great value as instructional aids, they are far more than that. With the computer alternate strategies are subjected to realistic tests, and aerospace doctrine emerges. And the time is not too remote when fresh intelligence on a potential enemy's capabilities and or-

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der of battle, fed into a computer as it is received, will turn out constantly changing designs for an optimum counter-strategy.

Still pretty much in the concept stage are similar gaming ideas for students and formulators of foreign policy. Whereas military games involve factors readily susceptible of quantitative measurement, international political games by and large do not. Thus a great deal of quantifying needs to be done to instill sufficient realism into foreign policy games. Among those who have suggested an approach to the problem are the husband-and-wife team of George and Charlotte Dyer, who proposed a foreign policy game in which batteries of colored lights would represent the actual and potential strengths of the nations under study and foreign policy measures taken would be scored, by changes in the light pattern, according to whether judges ruled them beneficial or harmful. Photo-electric cells measuring light intensities would provide constant readings on the progress of the game.

Two aspects of the Dyers' game are especially interesting. First, it makes a beginning toward quantification by breaking down the factors affecting foreign policy; and the diversity of these factors immediately suggests that nothing less than a high-speed computer could keep simultaneous track of all of them and their interrelationships. For example, each nation's resources, in order to be rated on a numerical scale, are broken into ten broad areas—geography, sociology, politics, foreign affairs, economy, industry, transportation, science, armed forces, and history. Then each one of these ten is resolved into its components, with sociology, for example, embracing race, population, language, temperament of people, education, health and welfare, recreation and amusements, institutions and national culture, religion and philosophy. Then each of these is sub-divided, population, for instance, into eighteen groups and sub-groups.

Second, it would score moves in the ten major areas separately rather than keep a single comprehensive score. Thus if the United States and Communist China were the combatants, no effort would be made to compare a Chinese gain in industry with a U.S. gain in science, but ten different running scores would be kept, so that comparisons could be

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made at any moment of the relative positions of the contending powers in any of the ten areas. To assign meaningful numerical quantities to the starting positions of the competitors and to each of their subsequent moves, the Dyers suggest that an operational research team be employed. (This and other gainful intelligence employment for operations research might be a good subject for a future issue of this journal.)

From air battle and foreign policy games to intelligence games with computers does not appear to be a very broad jump. Intelligence operations certainly have diplomatic and military parallels. With the beginnings made in these fields we could take it from there. Intelligence games, like the others, might vastly assist not only in training but in testing operational proposals and in developing doctrine.

All A is Not B and So Forth

There will arise problems, or parts of problems, that cannot be solved by arithmetic operations, no matter how ingenious the quantifiers and their systems or how swift the computers. There will be points at which a "yes" or "no" is what the user needs from the machine. But here again, the people who construct computers have made a good start on the task of attacking non-mathematical—i.e., logical—problems. Logic machines date back, in fact, to the thirteenth century, when a Spanish theologian and visionary named Ramon Lull was the first to embark on such gadgetry. Others after him invented improved devices to prove whether a certain major premise and a certain minor premise led to a certain conclusion and to solve other more complex problems. It was not until the advent of electronic computers in the twentieth century, however, that a really spectacular advance in logic machine principles could be made. If life is a lot more complicated these days than it was in Lull's, at least we have some pretty sophisticated hardware to help in simplifying it.

The principles involved in translating into machine language such ideas as "A is either B or not B" are, after all, much like those of translating numbers from the decimal system to the computer's binary system, wherein all numbers are expressed as a series of ones and zeros. Computers can

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therefore tackle either arithmetic or logic problems by making use of the basic fact of electronic life that any part of a circuit has to be in one of two states—on or off. This characteristic permits comparisons and tests which essentially guide the computer through the logical decision-making process.

What the limitations on computer capabilities really are is anybody's guess. The late John Von Neumann speculated on this question from a novel angle a few years back. He set out, in preparation for a lecture series at Yale, to draw comparisons between the most advanced computers of the day and the human brain, but drew them not on the basis of relative problem-solving capabilities or memories or any other aspect of performance but rather on the basis of structure as complexes of divisible parts. He looked at how these parts were assembled, how large they were, what their circuitry was, how fast they operated. Despite having worked at maximum capacity right up until his death in 1956, Von Neumann was unable to finish his study, and mankind was the loser. It may be surmised from what he did complete, though, that he might in the end have reached the conclusion that there were no significant qualitative differences between the computer and the brain and that scientific advances would inevitably narrow the quantitative gaps.

What and Whom Do You Know?

Backing away for a moment from what computers will some day be able to do, let's concern ourselves with their well-known current capabilities for storing and indexing information.

One day recently, some months after a certain operation involving a piece of real estate in a remote area, a case officer unconnected with the operation commented to a colleague, "I probably know that area better than anyone in the government; I've been duck-hunting there many times." Could this officer's knowledge of the area have been of use to those planning the operation? Very probably. Would they have had any rapid way of finding out except by sheer accident whether anyone in the organization had such knowledge? No, they would not. Until the past few years, there has been

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no practical way to index all of the experience and talents of all of our personnel.

We have made a start, it is true, using IBM cards. It is possible to learn through machine runs how many married, German-speaking men between 33 and 35 years old with civil engineering degrees and naval service there are in the Central Intelligence Agency. But to record even this basic data taxes the capacities of the card systems in current use. Should we decide to do so, we could, over a span of a few years, index personnel knowledge and skills to a degree never before dreamed of, using more advanced forms of electronic data processing.

In a television drama a few months back, a private organization was supposed to have compiled just such data on millions of U.S. citizens. The story concerned the search by a federal agency for a man who (1) was a barber, (2) knew a lot about stamp-collecting, and (3) could pick locks. The company found the man, the agency put his talents to use, and by the end of the program Yankee ingenuity had triumphed over a slick international narcotics ring. The real hero of the story was the computer—they must have used one—that pinpointed the right man for the job. It may be less than reckless to suggest that a comparable capability to match backgrounds to job requirements might be helpful in intelligence operations.

Or take the matter of acquaintances. It is our suspicion that in many cases where someone in an intelligence organization has an interest in someone outside of it, American or foreign, there may well be sitting down the hall and two floors up from him someone who knows the object of his interest personally. If he doesn't know him directly, he knows someone who is directly acquainted with him. Let's just consider American citizens. Suppose that each employee of an organization knows 1000 Americans outside of the organization. Then for every 1000 employees there are 1,000,000 Americans who are known directly. Allowing for a 50% duplication rate, there remain 500,000 Americans who are known to at least one employee of the organization. These half million in turn know 1000 each, or a total of 500,000,000 people. Cutting again for duplications we are left with 250,000,000 people.

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Maybe these figures are high, but they at least suggest that very few of our 180,000,000 American citizens are more than one step removed from direct acquaintance with someone in an organization of several thousand people.

Some interesting conclusions could be drawn from a similar approach to the question of what foreign citizens have ties of acquaintance, direct or indirect, to the staff of an intelligence organization. Would it be worth the expense to collect such information and keep it current? That is not for us to decide, but we can say that without the vast and infallible memory of a computer such an undertaking would be unthinkable.

Political Weather Forecasts

Among the many publications issued in the intelligence community is the rather recent "Weekly Survey of Cold War Crisis Situations." Among other kinds of crisis, it calls the attention of its readers to those countries of the world where things seem to be going not too well for the governments in power. The judgments on which countries belong where on the weekly list are made by competent, seasoned political analysts. Without for a moment questioning their qualifications for the job, we wonder if their work could not be effectively improved, say by around 1975, with electronic data processing.

More specifically, there might first be established a numerical scale called the "stability index" or something similar. Each country around the globe would initially be given a rating along this scale. A number near the maximum would describe a highly stable government, e.g., Switzerland's, while one near zero would denote a tottering regime. Once this rating had been assigned, every intelligence report affecting that country thereafter would be assigned a number, plus or minus or zero, reflecting the impact of the events reported upon the country's stability. These figures would be fed into a computer as fast as they were received. As often as necessary, the net result of the input could be recovered, perhaps printed out in the form of a "daily world political weather map."

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Would this form of automation sell short the political wisdom of the analyst? No, it would not. In the first place, the index could not replace the written analysis but only supplement it. In the second place, any such system would acknowledgeably have plenty of bugs in it which the experts would take months or years to work out. And in the third place, the assignment of numerical values to the reports would be an exacting job, involving several levels of rechecking by highly knowledgeable people.

The system would have advantages beyond the instant production of concentrated political judgment: It would provide a basis for quantitative comparison of a given situation with other regions and other times that would be more revealing than verbal description. By drawing more people into the appraisal process, it would also reduce the effect that any single analyst's biases, permanent or temporary, conscious or subconscious, might otherwise have on the final product. Finally, it would automatically insure that all of the available intelligence is taken into consideration and would guard against the inadvertent omission of pertinent data by a harassed senior analyst under pressure.

The Electronica Britannica

IBM has developed for public use a computer-based system called the "Selective Disseminator of Information." Intended for large organizations dealing with heterogeneous masses of information, it scans all incoming material and delivers those items that are of interest to specific officers in accordance with "profiles" of their needs which are continuously updated by a feed-back device. Any comment here on the potential of the SDI for an intelligence agency would be superfluous; Air Intelligence has in fact been experimenting with such a mechanized dissemination system for some years.

As a final thought, how about a machine that would send via closed-circuit television visual and oral information needed immediately at high-level conferences or briefings? Let's say that a group of senior officers are contemplating a covert action program for Afghanistan. Things go well until someone asks, "Well, just how many schools are there in the country, and what is the literacy rate?" No one in the room knows.

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(Remember, this is an imaginary situation.) So the junior member present dials a code number into a device at one end of the table. Thirty seconds later, on the screen overhead, a teletype printer begins to hammer out the required data. Before the meeting is over, the group has been given through the same method the names of countries that have airlines into Afghanistan, a biographical profile of the Soviet ambassador there, and the Pakistani order of battle along the Afghanistan frontier. Neat, no?

If and when computers begin to perform these and other functions, the effects will be felt fairly rapidly by every one of us, or, more likely, by the next generation of intelligence officers. Since all intelligence information will be processed by the computers, we (or they) will need to know the fundamentals of their construction and operation. Formats will change. So will collection requirements. Nearly everyone will have to go through new training. Many operational decisions formerly based on some research and a lot of educated guesswork will be reached only after consultation with the computer. A new language will be spoken; words like "digital," "analog," "programming," "game theory," "Boolean algebra," "Monte Carlo method," "stochastic process" will be commonplace. And "the monster" (as it is sure to be known) will provide a convenient target for almost all grievances, including many that no one has thought up yet.

Why do we need the computer? Partly, because of the staggering tasks and the shrinking time limits imposed on us by the space-age cold war, we need to delegate to it routine, repetitive arithmetical and logical calculations, thereby permitting fuller application of human skills to problems of judgment. But we also need it because it is available to us, because with it we can do jobs that we could never have done without it, "because," as the inveterate Alpinist explained, "it's there."

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Some further bits of historical and philosophical wisdom from the father of British scientific intelligence.

THE SCIENTIFIC INTELLIGENCER¹

R. V. Jones

The devices of Archimedes in the defence of Syracuse gave an earnest of what would happen in warfare as scientific knowledge expanded; and, although it has taken a long time to come, we have seen in this century a complete change in weapons brought about by the application of science. The classic principles of war still apply to the new weapons, of course, and one of the first of these principles dictates that you should establish the intentions of your enemy. In the modern situation, this principle has a new application: it is now vital that you should anticipate your opponent's use of science in warfare, and a need has thus arisen for scientific intelligence.

I have sketched elsewhere² some account of the service aspects of scientific intelligence in the 1939-45 war, and it may be of value if I give here my impression of scientific intelligence more from the point of view of the scientist. This form of intelligence has now become an important part of the defence system of all the major powers, and it is therefore desirable that its aim, scope, methods, and difficulties should be appreciated by everyone working in science in this country who may perhaps be able to help our own scientific intelligence organization or whose work may prove a target for the intelligence services of other powers.

Scientific intelligence is the foremost outpost of a defence system. Failure to appreciate the development of new weapons by enemies actual or potential may later mean a national disaster. Hitler's retaliation campaign with the V-1 and V-2 would, for example, have been much more damaging had we

¹ Excerpted from *Research*, Vol. 9 (September 1956), pp. 347-352.

² See *Studies VI 3*, p. 55 ff.

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not been alerted to develop countermeasures months before the campaign started. Today, as science and technology take up an increasing proportion of a nation's total effort, scientific intelligence is even more important than it was fifteen years ago.

Intelligence Sources

The variety of intelligence sources is greater in war than in peace because war entails direct contact with the weapons and the personnel of the enemy. Thus in war there are at least three kinds of source not normally available in peace: captured equipment, documents, and prisoners. There is also an increased amount of radio communications in the field, with greater chances of insecurity. While modern codes are highly secure and centimetric transmissions hard to intercept, there are the chances from time to time of lucky breaks. Photographic reconnaissance by air is another source in war; we owed much to it from 1939 to 1945, and there is no reason to believe that we should find it any less valuable in the future, even though robots may replace the pilots whom it was our privilege to regard as colleagues during that period.

The traditional peacetime source is the human secret agent. In scientific intelligence good secret agents are rare, and part of the skill of the game is to be able to use agents who have no scientific training. Occasionally an agent is a trained scientist or engineer, and he is then of outstanding value. The source of the Oslo report of 1939, for example, was presumably in this category, and his timely warning of several of the new German weapons placed us permanently in his debt, if we had ever been able to find him. Klaus Fuchs, Alan Nunn May, and Bruno Pontecorvo must have been of even greater value to the Russians had a war broken out in the last few years.

There is another important source, peculiar to scientific intelligence. This is the body of experts in particular fields of science available in one's own country for consultation. The phenomena of nature are independent of political boundaries, and the experts are in the position of agents spying on these phenomena in so far as they throw light on the feasibility of a suspected enemy development. As with many other factors in

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applied science, Francis Bacon was the first to see this analogy:

... and therefore as secretaries and spies of princes and states bring in bills for intelligence, so you must allow the spies and intelligencers of nature to bring in their bills; or else you shall be ill advertised.*

These words of Bacon exactly fit the function of specialists in relation to intelligence and, as we shall see later, one of the early difficulties in scientific intelligence was to make this understood.

The Task of Collation

Behind all the different sources there must be a centre co-ordinating their activities and collating their scraps of information. This centre may be alerted by information coming from any one of the sources, including the experts in its own country who may have found, for example, that a new kind of nuclear bomb is feasible; it then has to consider the import of this information and lay a plan of operation for all the other sources to throw light on what the enemy is doing in the new field. This is where it is particularly necessary to understand the capabilities of each kind of source and to have the imagination to see in addition that new kinds of source are perhaps possible. A new enemy development sometimes has an Achilles' heel, and one function of the coordinating centre is to foresee this and plan an intelligence attack on it.

Radar, for example, was a powerful aid to warfare, but it was also vulnerable from a security point of view, since it involved characteristic transmissions which could be intercepted and evaluated. Thus the 1939-45 war saw the establishment of new interception services for listening to enemy radar transmissions. More recently, trial atomic explosions are to some extent insecure in that they cause such large-scale interference with normal meteorological conditions that they can be detected fairly easily. One task of the coordinating centre, therefore, is to foresee such possibilities and to exploit them by setting up new forms of collecting agency.

* *The Advancement of Learning*, Second Book.

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The other main task of the coordinating centre is to collate the information coming from the various collecting agencies and to construct from it as objective and full an assessment as possible of what the enemy is going to do. The method here is precisely that to which scientists are normally trained, one of observation and deduction—with due regard to Occam's razor—followed if possible by prediction and confirmation. Because, however, of the fallibility of individual observations—either on account of inexperience or stress in the agent making them or of deliberately false information planted by the opponent—the scientific method has to take also into account those parts of legal and historical method which apply to the consideration of evidence. It should not be forgotten here that it was E. F. F. Chladni,⁴ following his training as a lawyer, who finally demolished the disbelief of the French Academy of Science in meteorites. As F. A. Paneth has said, by the eighteenth century men of science had become far too enlightened to believe such a ridiculous tale as that of stones falling from the sky; but Chladni went and talked to eyewitnesses of the fall of meteors and became convinced that they were giving a truthful account of their observations. It took ten years for the French Academy to admit that he was right.⁵

Occam's Razor

The principle of Occam's razor—that observations should be explained with the fewest hypotheses—is the surest guide to a sound appreciation of evidence; but in intelligence, as in pure research, it can sometimes produce the wrong result. One of the few examples which I encountered occurred when we noticed, both from aerial photographs and from plans of a flying bomb launching site which were stolen for us, that there was a single fuel store on each site. This building was divided into two completely separate parts, and the only way from one part to the other involved going outside and round an elabo-

⁴ Chladni, E.F.F. *Über den Ursprung der von Pallas gefundenen und anderen ihr ähnlichen Eisenmassen und über einige damit in Verbindung stehenden Naturerscheinungen*. Riga, 1794.

⁵ Biot, J. B. *Relation d'un voyage fait dans le département de l'Orne pour constater la réalité d'un météore observé à l'Aigle le 26 floréal au 11*. Paris, 1803.

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rate blast wall. It was obvious that the two materials had to be kept apart. We were aware of two fuel components the Germans had used in another application that satisfied the necessary condition: hydrogen peroxide and a solution of sodium or potassium permanganate. These could be used in a rocket motor, the permanganate decomposing the peroxide to steam and oxygen. Following this possibility, we found that some servicing personnel accustomed to handling these two materials had been drafted to the flying bomb regiment.

All other buildings on the site were checked and it was found that there was no other fuel store. We measured the capacity of the fuel store and found that it could hold enough peroxide to carry twenty flying bombs (the number usually stored on the site) the necessary range to London. We therefore tentatively concluded that the flying bombs would be driven by hydrogen peroxide rocket motors, and we were rather pleased with ourselves for seizing the clues, particularly when the fuels concerned had never been used by our own side.

In the upshot, the conclusion was wrong. Hydrogen peroxide and the permanganate were used, but only as the propellant in the launching catapult. The flying bomb motor was of a new and ingenious type, running on a low-grade hydrocarbon. Although the final assembly of the bombs was carried out at the launching sites, the bomb bodies arrived with full fuel tanks. To have assumed this on the facts available would have been a more elaborate hypothesis than the one used, but it was what in fact happened. Fortunately, our incorrect conclusion made no difference to our operational action, but it showed that, quite understandably, Occam's razor is a guiding rather than a rigorous principle. For this one failure, however, we could point to many successes where scares based on more elaborate hypotheses were dispelled by the intelligent application of the razor.

Expert Opinion

Chladni's experience in part exemplifies a key point in scientific intelligence, the function of experts. It has often been plausibly but erroneously argued that the best authority for assessing what an opponent is doing in a particular field of science applied to warfare is the scientist most concerned with

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the same development in one's own country. This argument was our worst obstacle in the development of scientific intelligence in Britain, but the fallacy in it is quite simple. As Bacon said, the true function of one's own expert is that of a spy on the laws of nature and the limits which they impose on a particular line of development. Usually, since he is a trained observer, much weight should be given to his opinion; but if this opinion disagrees with the evidence available from other sources, the coordinating centre should be able to go back both on the expert's opinion and on the evidence from the other sources. If the contradiction persists, then the coordinating centre must make a final judgement as to what is the truth about what the enemy is doing. In my own experience, while there have been times when the experts alone were right, there have been important occasions when the other forms of intelligence have been right and the experts wrong.

Two examples will suffice. The first concerns the German nightfighter radar control stations of 1942. Photographic reconnaissance showed that each of these stations had two 25-foot paraboloids. One of these paraboloids always had three searchlights around it, the other none. The inference was that the paraboloids were functionally different, and it was reasonable to conclude that the one with the searchlights was intended to follow the raiding bomber, which the German station would try to illuminate, while the one without searchlights was intended to follow another aircraft which it was not intended to illuminate, and this would obviously be the defending fighter.

Our own radar experts, however, disagreed with this conclusion, saying that the second paraboloid, following British practice, would be a standby if the first one broke down. They further pointed to the extreme difficulty they experienced themselves in marrying the plots from two different radar equipments following different aircraft with sufficient accuracy to bring about an interception. They were, of course, quite right that it is easier to observe both aircraft on one equipment because observations of the relative position of one aircraft with respect to the other are all that are necessary for interception purposes and any absolute error in the equipment can be ignored, whereas the use of two separate radar

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equipments entails each of them producing absolute measurements to a higher accuracy.

The point was a matter of some importance to our counter-measure programme, and of course we were concerned not with establishing the best way to do the job, but with discovering the way the Germans actually did it. Our experts had not realized the accuracy with which all German radar equipment was made to work as a matter of course. The German engineers had achieved the absolute accuracy required, perhaps unnecessarily, and the radar equipment was in fact used in the way deduced from the aerial photographs.

Another example was the opinions of the experts in the rocket threat of 1943-44. We found in photographs of Peenemünde what seemed to be a rocket about 45 feet long and nearly 6 feet in diameter. Our own experts assessed the weight at 80 tons, on the argument that the only practicable rockets known to them were those burning cordite in a steel case. A 50:50 charge-weight ratio was all that could then be achieved, since the whole steel carcass had to be thick enough to stand the full pressure of the exhaust gases. A simple calculation showed that a steel-cordite rocket of such dimensions would weigh about 80 tons. Then, with such a large carcass weight, it would obviously be a futile missile unless it carried a warhead of about 10 tons, and the War Cabinet was consequently faced with the threat of missiles the weight of railway engines crashing on London and exploding.

The way in which the threat was correctly evaluated may be of some interest because it shows the value of knowledge of elementary science unbiased by too much expertise. A trial rocket fell in Sweden in June 1944. Air intelligence engineer officers who saw the fragments reported to us that two fuels were fed into the jet chamber and one of the fuels was pumped by a pump which appeared to be lubricated by the fuel itself. This immediately recalled to us the details of the Claude process for liquefying gases as described in elementary textbooks and convinced us that liquid oxygen was one of the fuels.

From that point, it was a simple matter to sort out all those intelligence reports from agents or prisoners which had mentioned liquid oxygen as one of the fuels. For we had hun-

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dreds of reports, many of them bogus, and this fact of liquid oxygen could be used as a touchstone of truth to test the good faith and authority of the sources. This method of selection left only five reports, and they were all remarkable for the light weights which they attributed to the rocket and its warhead. As a result we in scientific intelligence were able to inform the War Cabinet that the rocket would weigh 12 tons with a 1-ton warhead, while the experts were still saying that such a light weight was impossible.

Principles of Impotence

I have mentioned the above examples in some detail because the general point is of much importance. Why is it that experts can sometimes be so entirely wrong, and yet so emphatic in their convictions? My own belief is that some of the reason lies in the success of "principles of impotence," particularly in modern physics. Somehow it seems part of the scientific approach to postulate impotence; even the ancients, for example, had their "Nature abhors a vacuum." More recently, the acceptance of such postulates has led physics to great advances: Albert Einstein's impossibility of signalling faster than light, Max Planck's inability to discriminate inside quanta, W. Heisenberg's indeterminacy, the second law of thermodynamics, and the unattainability of absolute zero, are all examples of outstanding success.

There is therefore a strong temptation, after one has failed in a particular experiment or line of development, to believe that one is up against a principle of impotence, and with a little ingenuity such a principle can usually be postulated to explain one's failure. Before 1939, for example, it was widely believed that centimetre waves could not be generated in thermionic valves because of transit time difficulties. Here it was our own experts who broke through the budding postulate, while the Germans remained bound by it until they were astonished by recovering centimetric radar equipment from a British aircraft.

In a different field, that of infra-red detectors, we in this country in 1939 were despairing of finding photoconductive materials sensitive beyond a wavelength of 2 microns. We were told that Service laboratories had tried all likely mate-

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rials, including lead sulphide, over a period of eighteen years, and had found nothing going beyond about 1.8 microns. Yet in 1944 scientific intelligence managed to prove that the Germans had lead sulphide cells going to 3.5 microns, with the prospect of lead selenide and telluride going further.

Having the privileged position in scientific intelligence of, as it were, sitting on the fence and watching laboratories on both sides in the war, I was repeatedly struck by two opposite phenomena. Sometimes both sides would in great secrecy develop precisely the same weapon. The "hollow charge," for example, was developed almost simultaneously by the Germans and ourselves. The Munro effect, on which it is based, had been known for some forty years without anyone taking any notice, and suddenly both sides started work on it. The jet engine and radar were other examples.

At other times, as indicated above, there were completely blind spots in the development on one side or the other. We failed to develop bulletproof petrol tanks in our pre-war aircraft; the Germans failed to develop the plan-position indicator and, above all, the atomic bomb. At the basis of all these examples and of many others there was usually the fact that someone had done a bad experiment or a bad calculation and, having apologized to himself that he was up against a new principle of impotence, he went around discouraging any of his countrymen whom he found trying to do the same thing.

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These considerations made us realize that scientific intelligence is likely to be confronted in any particular problem with one of three situations. The first is where both sides have developed a particular new weapon. This is the normal case, where the scientific intelligence organization can rely on its own national experts for briefing and for help in assessing the information about the enemy weapon. The second situation is where our own research laboratories have produced a weapon and the enemy has failed to do so. This is more difficult, since intelligence has then to prove a negative case, which involves a complete cover of all places in which the enemy might conceivably develop such a weapon. The third situation, which is both the most dangerous and the most dif-

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ficult from an intelligence point of view, is where our own experts have failed for one reason or the other to develop a particular weapon and the enemy has succeeded. Intelligence has then to be entirely self-reliant and to overcome the disbelief of the experts in its own country.

Scientific intelligence is a specialist task, almost as much so as research, and it requires its own coordinating and collating staff who are competent to take the ultimate responsibility in the light of both expert opinion and of the available intelligence. For this reason particularly, scientific intelligence needs to be staffed by men who can hold their own with the best experts available in their own country, who have a wide understanding of elementary science, and who are duly critical of principles of impotence. They must act as judges in conflicts between expert opinion and information received from other sources. More than this, they must be able to express their requirements to their sources in the way that these sources can best understand, and they must express their conclusions to policy officers in a way these officers can both accept and act on.

Returning for a moment to the matter of the failure of a country to develop a particular weapon, I would remark the tremendous value of knowing that the weapon can work if it is made. This is not particularly a matter of scientific intelligence, but it has some bearing on security. When a radically new weapon is conceived, such as the long-range rocket or the atomic bomb, there are often more disbelievers in its feasibility than otherwise. Even the strongest protagonist may then feel qualms of conscience in asking for more money and effort for development in the light of general disbelief, and he is certainly less likely to get what he needs. This nearly always slows up development. Such a brake is completely absent, however, when it has been demonstrated that the weapon will work: it is then known that there are no hidden principles of impotence, and bad experiments can be immediately rejected. Thus it was very much easier in principle for the Russians to make an atomic bomb than it was for the Americans, and from this point of view the explosion at Hiroshima (perhaps even the one at Alamogordo) was an act of value

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to the Russians not incomparable in magnitude with anything that an agent could have told them.

There may well be some scientists who consider that intelligence is a degrading activity for their talent, and that at best it is a "dirty business," prying into other people's secrets. It is true, of course, that some intelligence has its unsavoury side, but I would emphatically say that from my own experience the best intelligence is produced by "clean" methods. The professional spy is often a charlatan, and the good information comes not from him but from men who are actuated by idealistic motives to take great risks, or from the sheerly hard and painstaking work of officers who plough through an enormous amount of published detail to gather a few clues about what is going on abroad.

The idealist may be a patriot, risking everything to get vital information for his countrymen. He may also be someone who thinks his own country in the wrong, and who has either the courage or the presumption to hand over its secrets to foreign powers. Much as we may deprecate this, and indeed it must always be very doubtful whether any one man ever has the right to act in such an arbitrary manner, it is not the same as a traitor selling his country for personal gain, although its consequences may be more disastrous. I therefore count the idealist informer as "clean" from an intelligence point of view; we ourselves have from time to time been thankful for such services.

It would of course be silly to pretend that rackets do not exist in intelligence organizations. Such organizations always have a special claim—which must be granted—to be free from public investigation, and it is inevitable that this privilege is sometimes abused in that security is made the cloak for inefficiency. It will in fact add a good deal to any scientist's experience of human nature, both good and bad, to work for a time in intelligence, but there is no need to imitate the bad, and there is much to admire in the good.

I do not pretend that scientific intelligence is as fundamentally satisfying a pursuit as either pure science or applied science. All intelligence has an element of the parasitic: you can only find out about a weapon if someone has done the more fundamental job of bringing it into existence. The serv-

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ice you may thereby render may be extreme, and the excitement of the intelligence chase may exceed almost any experience in normal life, but at the end of it all you cannot claim to have made a constructive step comparable with, say, a discovery in pure science or an invention in engineering. Moreover, it cannot be pretended that a spell in intelligence will enhance a scientist's reputation in his own field. If anything, the reverse is likely to happen, and it should be realized that any scientist working in intelligence may well be making a deliberate sacrifice of his personal interests partly because he believes that our way of life is worth defending.

Articles and book reviews on the following pages are unclassified and may for convenience be detached from the classified body of the *Studies* if their origin therein is protected. The authors of articles are identified in the table of contents preceding page 1.

The editors gratefully acknowledge the assistance of Mr. Walter Pforzheimer, Curator of the CIA Historical Intelligence Collection, in scanning current public literature for intelligence materials, and of the intelligence officers who prepared book reviews for this issue of the *Studies*. Most notable in this respect are the following:

Wise and Ross, <i>The U-2 Affair</i>	JOHN WARNER
Tompkins, <i>A Spy in Rome</i>	<div style="border: 1px solid black; width: 100px; height: 30px;"></div>
Groves, <i>Now It Can Be Told</i>	
Hastrup, Books on the Danish Resistance	
Tuchman, <i>The Guns of August</i>	PAUL BOREL
Moore and Waller, <i>Cloak and Cipher</i> ..	<div style="border: 1px solid black; width: 100px; height: 20px;"></div>
Lampe and Szenasi, <i>The Self-Made Villain</i>	

WALTER PFORZHEIMER

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Intelligence Articles VI 4

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A counterintelligence object lesson—how, without touching a pinfeather, to kill the goose that lays the golden egg.

CAPTAIN STEPHAN KALMAN
A Classic Write-In Case

The agent of an adversary service, or a person high in an adversary bureaucracy, if he wishes to make contact with another intelligence or security service, can choose from a number of different means. He can present himself physically as a walk-in. He can use an intermediary in order to retain some control, especially with respect to his own identity. He can send a messenger, make a phone call, or establish a radio contact. Or he can simply write a letter, anonymous or signed.

Cases of this kind are counterintelligence matters from the inception. The critical problem is to separate the write-ins, walk-ins, or talk-ins who are acting on their own initiative from those who are seeking contact at the instigation of the hostile service. For that reason, until bona fides has been established or can reasonably be presumed, the counterintelligence handling of the case should follow the principles of circumspection and control used in the practice of double agency. Up to that point, at least, this course is only a matter of simple common sense.

But let us examine the theory further. A provocation agent, that is a walk-in or talk-in acting upon the instruction of the adversary service, must have direct contact with the target service at least once in order to effect the provocation. The target service, if the lure has been exciting, should then try to arrange for other meetings in places under its own jurisdiction: the provoking service, it is reasoned, fearing some slippage of control during such meetings, traditionally tries to avoid them after the initial contact. This course of action may work very well with most *walk-ins*; but counterintelligence thinking has become so colored by walk-in theory that its lines of reasoning tend to be extended rigidly to case work

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on anonymous *write-ins*. The write-in is thus counted a provocateur although he never appears and makes the provocation.

The record, however, shows no successful examples of unsolicited write-ins under adversary control from the inception. This experience suggests that there may be a basic difference psychologically between the write-in and the walk-in and, further, that the two present different problems to the counterintelligence operative and analyst, notwithstanding the fact that they both must be viewed initially as potential double agents.

Two cases which throw sharp light on this matter have already been cited in these pages. The anonymous letter to the British naval attaché in Oslo in 1939 giving immensely important information on German weapons development¹ is a good example of a bona fide write-in whose identity is still unresolved. And the write-in from the German Abwehr whom another article called "L,"² insightfully handled by the Czech intelligence service, became and remained until the end a valuable agent-in-place. A third case is the subject of this paper. Ironically linked with the successful Abwehr write-in L, it shows the damage a headquarters can do when it handles a problem blindly and bureaucratically, according to the rules—*Control the agent. Identify him. Don't do clandestine work with unknown parties. Get possession of the body. Ask all the questions. You order; the agent obeys*. By applying these rules, misreading the clear signs of the one-time write-in, the Germans denied themselves a source in Stephan Kalman and wrote for him his death warrant.

Frontier Defense Betrayed

From the middle of 1936 Czech military intelligence had enjoyed the services of the agent L, whom it had developed from the initial write-in and whom it numbered A-54. He was a German officer, a member of Admiral Canaris' Abwehr. He provided information of the highest order, delivering to the Czechs material of all kinds that came into his hands. During a contact in February 1937 he said jokingly, "From

what I have given, you should know plenty about our frontier defenses, our *Grenzschutz*. Today I am going to show you what we know about yours." He handed his case officer a sheaf of documents of about forty pages; a quick glance showed it to be exceedingly sensitive material concerning the Czech frontier defense in Northern Bohemia.

L explained: "This material in its original Czech version was received by our headquarters in Berlin by mail. It had been posted in a German mail box in Eger [the Czech Cheb] on 15 October 1936. It was absolutely anonymous. There was no accompanying letter and no identification of any sender or his whereabouts. Our bosses in Berlin were all excited about the importance of the material and waited for more deliveries. When none came, all of the Abwehr field posts working against Czechoslovakia,³ including mine, were sent a typewritten translation of the material and given orders to identify the knowledgeable unknown collaborator. Up to the present time, our search has been in vain." Then he added, perhaps out of spite, "I do not think you will have better luck." In this he was wrong.

What damage had been done to the security of the Czech defense by the Abwehr's unidentified benefactor? The *Grenzschutz* plan was a very elaborate blueprint for the defense of the border territory at a time when international political tension threatened to end in general mobilization of the armed forces or, as it did, in armed conflict. The plan contained data concerning partial mobilization, what units would be used for the defense of border areas, their operational tasks, their command organization, and their communications with higher units which would be mobilized and concentrated in operational areas. There were data concerning armaments and supplies of various kinds, and an intelligence plan for positive and counterintelligence measures to be taken immediately preceding an outbreak of hostilities. The *Grenzschutz* plan, an integral part of the Czech general war plan, was a thing that could not easily and quickly be altered,

¹ Intelligence Articles VI 3, p. 57.

² "The Shorthand of Experience," Intelligence Articles III 2, pp. 105-127.

³ Breslau, Dresden, and Munich.

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and its betrayal to the country's most powerful potential enemy was disastrous. By now, in early 1937, the Czechs knew perfectly well that time was running out in their conflict with the Nazis. Czech counterintelligence, therefore, had to apprehend the anonymous traitor as soon as possible. There was not much to go on, but as it turned out there was enough.

The first step was to establish whether the data in L's material were authentic. The papers were checked with Colonel Oleg Prochazka, the head of the 3rd (Operations) Department of the General Staff, who was a most upset officer when he had read them: they were genuine. They were not an exact copy of the border defense plan, but excerpts made by someone who knew the material well enough to skip the non-essentials and concentrate on what was important. They gave in full the plans for the 4th Military Division and in part those of the two divisions scheduled to operate on its wings, evidently because the 4th Division plan in fact included partial data on the flanking divisions.

Records Aid the Hunt

Internal evidence thus seemed to steer the investigation to 4th Division headquarters, but the problem was not so simple as that. Copies of the 4th Division plan were also held by the headquarters of the 2nd Army and in Prague by the headquarters of the 1st Army and the Operations Department of the General Staff. There were these four different places where the leak could have occurred, and all four had to be investigated.

What could the investigators look for? Because of the write-in's scrupulous precautions to protect his anonymity, it was concluded that he had done the mailing personally. He would therefore have had to travel to Eger, where the documents were mailed on Sunday, 15 October 1936, from his military post. Someone familiar with the plan who could have made such a trip on that date would be the man. Special permission was required to leave a garrison on Sunday, and there would be records. Saturday was a working day, and all leaves were recorded.

Bigot lists⁴ of all persons working on the border defense plans at all echelons had been maintained and were at the disposal of the investigating officers. They were thoroughgoing and fully controlled as a matter of routine. In addition to identifying individuals authorized to work on the plan, they indicated what element of it each had worked on, at what time, under whose supervision, and if after working hours on whose authorization.

The investigations at the General Staff and the 1st Army headquarters in Prague were very brief and conclusive. Copies of the 4th Division plan had been sent to these headquarters through the 2nd Army Corps in Hradec Kralove on a date well before 15 October 1936, but they were still deposited in the safes at these headquarters and no one had looked at them since their receipt. These results cut the circle to be investigated by half. Moreover, there was another reason to be thankful: Prague was so near Eger that the trip could have been made from there much more inconspicuously than from Hradec Kralove in the east, where the other two suspect headquarters were located.

At the headquarters of the 2nd Army Corps, Commanding General Tuma and Chief of Staff Colonel Cingros were not happy when informed about the investigation. Counterintelligence officers from Prague were commonly referred to as "the Blackbirds"; even among friends they always brought bad news. But this time they caused no great trouble.

In peacetime, the 2nd Army Corps was purely an operational command having some administrative functions and a small number of personnel. Its job with regard to the border defense plan was limited to commenting on the work of subordinate divisions and ordering the proper corrections and readjustments. It was found that only four people had engaged in this work—the commanding general, the chief of staff, the head of the operations section, and a junior officer who had typed the orders issued to subordinate units. All four were eliminated after careful examination of the records: on

⁴Lists of those having access to sensitive information. The term has been most widely used in connection with Operation Overlord, the plan for the 1944 landings on the French coast.

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the critical days of 14, 15, and 16 October none of them had been absent from the command.

It was now clear that the investigation must concentrate on the headquarters of the 4th Division itself. Commanding General Kutivaser and his chief of staff, Lt. Colonel Chleboun, refused to believe that such a horrible betrayal could have been committed in their headquarters, but they cooperated zealously, providing a list of all staff members who had worked on the plan. It was very quickly ascertained that one of these, Staff Captain Stephan Kalman, had taken a leave of absence from 12 to 16 October and spent it in the small village of Nyrany, near Pilsen, in Western Bohemia. Pilsen is about half way from Prague to Eger, three hours short by train.

Kalman, attached to the operations section, had had the Grenzschutz plan as his main assignment for nearly two years; he was familiar with all its details. A bachelor of 28 years, he was a graduate of the War College in Prague. By family background he was Hungarian, and he spoke Czech, Slovak and Hungarian fluently. His father was a prosperous merchant living in Levoca, a small town in Eastern Slovakia.

A check into every other lead at 4th Army left Kalman the only suspect. It was decided that he should be taken to Prague, ostensibly for important consultation. The Czech officer conducting the investigation found him to be a handsome young man of medium height, muscular, with a dark complexion and bright black eyes, immaculately dressed and self-possessed. When told to come along to Prague immediately, without taking time to go either home or to his office, he was absolutely unmoved. He gave the impression that he would be a difficult man to break.

In Prague, the chief of the Czech General Staff, General Krejci, gave orders to get a prompt confession and conviction of the criminal and his accomplices, if there were any, but he forbade the counterintelligence officers to use any illegal coercion to elicit the confession. He himself set about attempting to discover who in the General Staff or at the Ministry of Defense had been responsible for letting Kalman into the War College; it had been customary, though there was nothing in writing, not to admit candidates with German

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and Hungarian backgrounds into the highest military school. He found that all departments of the General Staff had been against Kalman's nomination but that the Office of the Minister of Defense had made the decision to admit him after strong intervention on the young man's behalf by a powerful denominational political party.

The Quarry at Bay

The interrogation concentrated, naturally, on Kalman's whereabouts during his October 1936 leave and especially on his alibi for 15 October. At this point he was not told anything about the suspicion he was under, and he did not ask. His apparently indifferent acceptance of interrogation and confinement tended to strengthen the presumption of his guilt.

He maintained steadfastly that he had spent the whole time at Nyrany, leaving for Hradec Kralove via Prague on the morning of 16 October. This statement was easily checkable at the Nyrany garrison, because regulations required every military man away on leave to report to the nearest garrison headquarters on the first and last days of his absence. Kalman had duly reported his arrival on 12 October, but he had registered for departure not on the 16th but on the 14th. When faced with the discrepancy he said that since the 15th was Sunday and he intended to leave early Monday morning, he had no alternative, with the offices closed on Sunday, but to report departure on Saturday the 14th. This explanation was air-tight; if the timing was a part of the original scheme it had been well thought through.

Where did he stay in Nyrany and with whom? At these questions Kalman became stubborn. He said he had been with a girl friend with whom he had had a long-time affair, that she was married, and that therefore as a gentleman he could not give her name or address. For four days he persisted in this position. He finally had to be told that he was suspected of high treason of which he could clear himself only by cooperating and that his desperate situation precluded the luxury of acting the gentleman in this matter. He then yielded and the young married woman he identified was brought to Prague. After a relatively brief interrogation she admitted having been Kalman's mistress and confirmed his

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story except in one particular: he had left Nyrany Sunday morning, saying he had to be at his post the next day.

Confronted with this significant contradiction, Kalman was not even embarrassed. With composure and nonchalance he acknowledged that he had indeed left Nyrany on Sunday. He had gone to Prague, he said, to spend a gay bachelor's day, something he obviously could not tell the lady. He then went into lengthy detail about restaurants where he had eaten there, a soccer game he had attended, and his evening of night-clubbing. He was unable, however, to name any person who could back up his statements. The remainder of the night he said he had spent with a woman he had picked up at a night-club; he did not know her name or address. It was clear that he was lying, but it would be very difficult to prove it.

Kalman, an intelligent man who by this time knew he was fighting for his life, managed to keep his composure with an incredible self-possession and impertinence. There was no trick of the interrogator's art that could put him off his guard. He played the innocent man under horrible suspicion because of circumstances purely coincidental. He repeatedly cited in his own defense the excellent ratings he had received from all his superiors during his military career. The only thing he did not do—and this kept his interrogators keen on their task—was to voice a natural complaint about what was being done to him. He knew that he was being held in custody long beyond the period prescribed by law. He was being denied any distractions such as reading, radio, and exercise; he had been hermetically separated from the outside world. Yet he accepted all this as matter of course, outwardly a very calm man without worries or disturbances.

By the tenth day the frustrating interrogation was beginning to wear down the accusers, and the Chief of Staff was becoming impatient with their progress. As a device for psychological pressure, Kalman's guards were therefore ordered to handcuff him for the night. The next day he appeared tired, depressed, and nervous; possibly he had concluded from the handcuff treatment that more was known about him than had been revealed. In order to exploit this psychological break everyone was sent out of the room and the interrogator began to talk to him in a sentimental,

liturgic tone. He spoke about Kalman's father, his mother, his youth, about the country that had given him everything a young man could expect. He drew quotations from philosophers and classic writers to add weight to this thrust at the emotional target.

Kalman listened, he did not interrupt, and at the conclusion he was obviously moved. When he was asked if he had anything to say, there was a long silence. Asked again, he said after some hesitation, "Not yet." The interrogator left him with the word that he should call any time there was anything he felt he could talk about. At midnight, through the duty officer, Kalman asked to see the interrogator alone. "All right, I did it," he began, and made a full confession.

When queried about his motives, he gave a long, unconvincing account of unsatisfactory relations with his military chiefs. It was pointed out to him that no one would betray his country for mere personal vengeance, but the subject of motivation was not pressed.

The Crime Reenacted

Kalman described his act of treason in great detail. As the general staff officer in charge of work on the defense plan he had plenty of opportunities to make the excerpts. When they were complete he decided to hand them over to the Germans. To the question, why to the Germans rather than the Hungarians, he replied that he considered the Germans more serious than the Hungarians, and moreover the trip to Western Bohemia was shorter and more inconspicuous than one down through Moravia and Slovakia. He had left Nyrany early in the morning on the 15th and gone to Pilsen, from where he caught the afternoon train for Eger and arrived about 5 o'clock.

He knew that half of the railway station was under German jurisdiction. Border controls were superficial and concentrated on those traveling on by train. He crossed the dividing line between the two parts of the station without difficulty and mailed the envelope in the first post box he saw. He had addressed it to "The Chief of the Abwehr, Berlin, Germany," with no return address. He had been doubtful about how much postage to put on the envelope because it was quite heavy; he had used a stamp of three times the

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value required for a normal letter, hoping this would be satisfactory. He then took the next train to Prague, sure that no one had seen him who could identify him. He reached Prague in the early hours of 16 October and at 10 o'clock went on to Hradec Kralove.

He had been completely satisfied with his performance; he could not find any weak point in the whole scheme. He was convinced that nobody would ever discover how the mailing was done or who had done it. He began work on a new assignment and tried to forget about the incident completely.

This confession, once it had started, had been practically a monologue. He was now asked why he had delayed it so long and why he had chosen midnight to make it. He answered that his behavior during interrogation was the result of his instinct of self-preservation and the conviction that he had not made any mistake in planning and executing the deed. He acknowledged that he had been astonished when he was picked up and taken to Prague. But he was unable to figure out how he could have been traced, and he hoped that by denying everything he could save himself. Later, when he was held in custody against regulations, he had become uncertain and began to suspect that the authorities knew more than he had been told. The handcuffs had broken his resistance. The timing of the confession was a sentimental matter: he did not want to spoil his mother's birthday, which happened to fall on that day, by the admission of his crime.

Kalman now became cooperative, though not repentant. A copy of the defense plan was brought in, and he pointed out the items he had copied literally and those he had supplied in extracts. What he acknowledged having sent to the Germans appeared to amount to more material than L's report contained, but the basic items were identical. Denying that he had had any accomplices or assistants, he argued the point with logic: a primary guarantee of his own safety, as he had planned it, was the absence of anyone else in the know.

Although cooperating otherwise, Kalman stuck to his original clearly false statement about the motive for his action—personal hatred for his superiors. He answered all questions regarding the betrayal of other materials with a categorical negative, maintaining steadfastly that he had mailed only

this one letter and that he had no intention of doing anything similar in the future. He stressed again the importance of his security in this connection.

"Long Live Hungary"

The interrogation had lasted about fourteen days, the whole investigation about three weeks. Kalman was remanded to the judicial authorities for trial. Counterintelligence officers would not be able to present information in court or supply as evidence the material he had delivered to the Germans; the case had to be based almost entirely on his own confession. Would he decide at the trial to retract it, claim that it was forced from him by illegal means? If he did, there would remain only circumstantial evidence.

In court Kalman refused to procure counsel, saying he would defend himself; but in accordance with Czech law an ex officio counsel was appointed, an elderly attorney of apparently mediocre ability who seemed to have little interest in the case. The presiding judge, on the other hand, had little understanding or sympathy for the security needs of an intelligence service; Kalman was his first espionage case. The trial was held *in camera*, however, the standard practice when secret matters of national defense were involved, and the court agreed to accept a recorded confession in Kalman's own words and voice. Military experts from the operations and intelligence sections were present to inform the tribunal what secret information had been betrayed and to what extent the security of the nation had been put in jeopardy.

Kalman pleaded guilty. The opening speeches of the prosecutor and the defense counsel followed, the first vigorous and almost passionate, the other weak and unmoving. There were a few witnesses—Kalman's girl friend and his superior, Colonel Chleboun, who made a poor showing. Finally Kalman himself testified. He admitted everything as charged. He answered all prosecution questions promptly and without hesitation except those concerning his motivation; he refused to elaborate his brief statement that this was a personal matter. After closing speeches by the two counsels and a short deliberation of the court, he was sentenced to death by hanging. He took it very calmly. He made an unsuccessful appeal only upon the insistence of his family. His request to

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be shot rather than to be hanged was denied. Also denied was an appeal to the president for a reduction of sentence.

On the day preceding his execution Kalman wrote three letters. Two of them, one to his lady and one to his parents, were what could be expected; but the third, addressed to his interrogator, was of quite different character and content. In it he complimented the interrogator for the skill and craftiness with which he had conducted the investigation. The letter concluded: "This time you and your side won. But the time is near when justice will prevail. This unnatural and artificial state of yours will disintegrate, and my countrymen living in it will be free at last."

Kalman thus revealed, just a few hours before his execution, the real motive for his anonymous service to the Abwehr. He went up to the gallows with swift steps, as if he were on a tennis court. He was inattentive and impassive during the unnecessarily long reading of the sentence and its rationale, although several soldiers of the assisting company fainted from the tension of this ritual. As the executioner put the noose on his neck, the prisoner cried out in Hungarian, "Eljen a haza," "Long live the Fatherland!"

Moral of the Story

What conclusions can be drawn from the Kalman case? His betrayal inflicted practically irreparable damage on the defense of the country. The controlling bases of any defense plan—terrain and strategic and tactical aims—do not alter, and plans resulting from study and analysis over a period of years cannot be changed unless the whole strategic idea is changed. That is practically impossible unless the basic motivations are altered by shifts in alliances, radically different fortifications, or other changes of a major order.

One conclusion derives from positive and negative aspects of the Czech performance with respect to security. Security applies on every echelon of command. There is no place for laxness, even if it may seem overbureaucratic and ridiculous. The application of security measures has to be executed precisely in every detail. There is no place for overconfidence in friends and old acquaintances. That Kalman, with his alien loyalties, came to be trusted with sensitive materials is evidence of such overconfidence. That he was able to make

excerpts from the secret plan and smuggle them out of the office may show negligence in the administration of controls. But on the other hand the scrupulous maintenance of records regarding access to the plan and the whereabouts of personnel made an effective counterintelligence investigation possible.

Another conclusion affirms the considerations concerning write-ins with which this essay began. Kalman had been able to carry out almost a perfect write-in operation. From his point of view everything *was* perfect; and it is to be underlined that instinctive concern for his own security governed the methods he used and the decisions he made. The weakness was not with Kalman but with the recipient of his information. The Abwehr, experienced and with a long tradition, committed a serious error, or rather two errors, except for which the betrayal would never have been discovered.

Its first error was not to be content with what it got, important as it was. It wanted more and quickly, and it wanted to know the identity of the informant. Its zealotry is understandable, but the main point in this whole case history, to be noted by intelligence and counterintelligence officers alike, is that such zeal can lead to the destruction of the source itself. The anonymous informant, the write-in, is not an unusual interpersonal or social manifestation. His information has to be checked, normally with double thoroughness; but the reason for his anonymity is usually a matter of security, and a crude attempt to identify him may be the first step toward disaster.

In the Kalman case the Abwehr compounded its mistake by inordinately widening the circle of people who knew of the source's existence. Its distribution of copies of the windfall to three field posts increased the knowledgeable number at least by eight, at echelons where security is never absolutely tight. The place for any inquiry into the source of the letter should have been Berlin, where it arrived. An examination of the contents there, done by one or two competent officers, would have shown it to have originated in the 4th Division at Hradec Kralove. This achieved, it might have been possible, with skill and patience, not only to identify Kalman but to persuade him to continue his collaboration.

Methodology and validity of a pioneering estimate of German supply and transport problems in 1941.

THE EASTERN FRONT AT THE TURNING POINT
Review of a Logistics Estimate

In December 1941, after General Winter had pinched out Hitler's spectacular six-month Russian onslaught just short of its objectives—Leningrad, Moscow, and the Donetz basin—and on the other side of the globe Pearl Harbor had brought America into the war at last, the question before the world was whether the hitherto invincible and still mighty German armies, when they renewed their offensive in the spring, could finish off the Russians and turn west again before the United States had time to gather the strength to be felt across two oceans. If they could reassemble anything like the power they had turned loose the previous 22 June, it seemed probable they could; but their supply lines were now almost a thousand miles longer than then, and the deeper they went the worse it would get. If transport had been a bottleneck for them in 1941, the Allies could be more sanguine about 1942 and would know better what their own strategy should be. But had it?

The task of answering this question was undertaken by the Office of the Coordinator of Information, a six-months-old hybrid soon to be split into the Office of Strategic Services and the Office of War Information, and specifically by its Research and Analysis Branch, a constellation of brains assembled by Wild Bill Donovan which was to become in one way or another the progenitor of many a production component in the present-day intelligence community. Before the winter was over these analysts had resolved the thousand and one shadowy unknowns of the problem into tables of hard figures on the German forces' supply requirements and the capacity of transport to their front lines and issued a 166-page report

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A Logistics Estimate

entitled *The German Supply Problem on the Eastern Front (June 22–December 6, 1941)*.¹

This was the first historic effort to devise a methodology for military-economic studies of a kind that are now routine in the intelligence community, and if the techniques used and the resulting estimates seem crude, it is because there was no background of previous experience or knowledge from which to draw. Moreover, the analysts found that in those first months of U.S. involvement in the war the information available in government offices here was incredibly meager. They had to build up their estimates of German troop strength, for example, by attempting to reconstruct the campaign day by day and division by division from the *New York Times*. No one in Army Ordnance could give the slightest clue as to the probable expenditure of ammunition in various types of fighting. The analysts could not go either to experts or to sources; they had to become the one and to invent the other.

Twenty years later it is still instructive to review their search for sources and the hard thinking and mass of calculation that went into their reconstruction of what lay veiled behind the smoke of battle. It is also sobering, for all those that today must concoct estimates from scanty evidential ingredients, to compare their results with what has become known since they were published. The conclusions of the report pointed, if feebly and with hesitation, in the right direction; but the painstakingly derived figures on which these conclusions were based, it appears when they are compared with records in the diary of Franz Halder, Chief of the German army's General Staff, bore little resemblance to reality. While some of the component calculations that can thus be checked were about right and others were too low, the most

¹ COI Monograph No. 6, 25 March 1942, Confidential (later declassified). An embarrassing blemish was imposed on the nose of this impressive document by the typist, who changed the 1941 of the title to 1942. Among those who participated in the preparation of the report were W. W. Rostow, now policy planner at the State Department, E. A. Mayer, now with the Institute for Defense Analyses, Samuel Van Hynning, Chandler Morse, now professor of economics at Cornell, and Donald Wheeler.

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important were so high that they threw the aggregate results off by four to five hundred percent.

Supply Requirements

The first job was to fix the tonnage of supplies of all kinds consumed daily at the front. A division's requirements would vary according to its strength, whether it was infantry, motorized, or panzer, and the kind of fighting it was doing. From the War Department's Military Intelligence Division and the *New York Times* figures were derived for the initial strength of the invading forces and their rate of attrition, the numbers and kinds of divisions in each of the army groups—North, Center, and South—and the T/O&E of each kind. For purposes of calculation, divisional strength was assumed to remain constant, attrition being applied to numbers of divisions. To determine how many of each kind of division did what kind of fighting for how many days, an analytic study of the campaign as reflected in communiqués and intelligence reports divided it into eight manageable time periods on each sector of the front.² Seven types of action were distinguished, ranging from Inactive and Siege to Major Push and Heavy Fighting. The number of divisions of each kind engaged in each type of combat during each period on each sector were then tabulated and these figures combined to show division-days devoted

² The analysis erred in making the first period "a generalized push across the frontiers" and saying that the "regrouping of the German armies under the three commands [North, Center, South] . . . took place only on July 17." The three command groups were set up by the original Directive 21 issued the preceding December. It also erred in seeing "a major shift in Nazi strategy . . . during the campaign" from the aim of destroying Russian military resistance to that of "seizing and holding important territories and cities." Directive 21 named as objectives the capture of Leningrad and Kronstadt, the occupation of the Donetz basin, and the capture of Moscow, in that order, and the enemy forces were to be destroyed in the course of reaching them. These two aims did seriously clash once in August, when Hitler, over the opposition of most of his generals, diverted part of Army Group Center from its drive on Moscow to help Army Group South destroy the huge bulk of Budienny's army group in the battle of Kiev, which Hitler called "the greatest battle in the history of the world" and Halder "the greatest strategic blunder of the eastern campaign."

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to the different kinds of combat in each period. The results for infantry divisions are illustrated below.

Type of division and type of combat	Total Division Days							
	Period I June 22- July 17	Period II July 18- Aug. 1	Period III Aug. 2- Aug. 30	Period IV Aug. 31- Sept. 25	Period V Sept. 26- Oct. 30	Period VI Oct. 31- Nov. 1	Period VII Nov. 2- Nov. 17	Period VIII Nov. 18- Dec. 6
<i>Infantry</i>								
Major push.....	1,330	78	372	841	606	—	100	340
Heavy fighting.....	830	954	563	1,215	400	50	230	565
Slow advance.....	—	—	160	—	270	660	730	135
Defensive fighting.....	—	—	315	1,030	240	120	—	130
Reconnaissance.....	648	172	224	360	469	10	60	100
Siege.....	—	—	—	—	156	120	160	190
Inactive.....	1,222	756	1,026	1,404	1,187	480	640	760

The expenditure of supplies incurred on each of these division-days was calculated in seven categories—food, forage, clothing, ordnance, ammunition, fuel, and miscellaneous. Since food and clothing requirements are a function of the number of men attached to a division, including varying allocations of non-divisional GHQ troops, the total number of the latter (estimated from MID information and analogous U.S. practice) were apportioned evenly for purposes of computation among the infantry, raising the 16,000 T/O of an infantry division to 27,000 men.

Food. The weight of a typical daily ration for one man at the front was computed, converted by multiplication to tons per day for each kind of division, adjusted for weight added (by making bread from flour, for example) or subtracted (as by dressing meat) at the distribution points immediately behind the front lines, and used as a constant throughout the campaign without regard to type of combat. Forage and clothing were also considered to be constants.

Forage. The number of horses used by an infantry division was estimated from the number of horse-drawn vehicles (800-odd) in its T/O&E and multiplied by the weight of a daily ration of hay and grain. To this was added forage for livestock butchered to make up the soldiers' meat ration in sufficient quantity to take care of motorized and panzer divisions as well as infantry.

Clothing. Data was lacking on clothing requirements, but the item is such a minor one that a rough approximation (one ton per division/day) derived from British Ministry of Eco-

nomie Warfare figures on "wastage factors" in the German army as a whole was considered adequate.

Ordnance. The weight of replacements for vehicles and guns in the complement of each kind of division was calculated on the basis of data from the U.S. Army's Ordnance Branch as a percentage of the weight of each original ordnance item. A distinction was made between active and inactive divisions in fixing rates of expenditure but not, on advice from the Ordnance Branch, among different types of combat. An additional ten percent was allowed for parts replacements, as suggested by the Ordnance Branch.

Ammunition. Ammunition requirements were the most important variable with different types of combat. Unit-of-fire figures—the number of rounds fired from one weapon in an average day of active combat—used in the U.S. Army were adapted to German weapons, and one unit of fire was allowed for a day of Heavy Fighting, with fractions of this for other types of combat. The weight of a unit of fire for each weapon in each kind of division was then calculated to give the tonnage expended in a division-day of each type of action.

Fuel. The average distances moved per day in the field by different types of vehicle, as reckoned in U.S. Army staff work, were adjusted by factors reflecting the different types of combat, the movement of the front, and the kind of division in question and multiplied by the fuel consumption per mile of each kind of vehicle. To the resulting totals for all tactical vehicles of each kind of division in each type of combat were added five percent to take care of lubricants.³ It was estimated, however, that thirty percent of all trucks were not allocated to combat usage, but to bringing supplies forward from railheads and distribution points, and the fuel requirements of these were calculated separately as a function of the total tonnage of supplies that had to be moved to distribution points and to the front and of the distance from railhead to distribution point and from distribution point to the front. To this was added an estimated amount of fuel for ordnance vehicles brought forward from the railheads under their own

³ Halder noted on 11 August that two percent was normal but current consumption was running five.

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power and an amount for conveying the fuel itself to point of use.

Miscellaneous. Five tons per division-day was allowed for engineer supplies; and the total tonnage covering all categories of supply was increased by five percent to take care of other miscellaneous materials.

The sum of all these calculations gave the total tonnage required at the front, at distribution points, and at railheads per division-day. The railhead requirements arrived at for infantry divisions are reproduced below.

	Heavy Fighting	Major Push	Slow Advance	Defense	Mop-up (reconnaissance)	Siege	Inactive
	tons	tons	tons	tons	tons	tons	tons
Food.....	33.8	33.8	33.8	33.8	33.8	33.8	33.8
Forage.....	38.0	38.0	38.0	38.0	38.0	38.0	38.0
Clothing.....	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ordnance.....	35.1	35.1	35.1	35.1	35.1	35.1	35.1
Ammunition.....	1,145.0	460.0	636.0	460.0	266.0	348.0	0.1
Fuel.....	49.9	74.5	38.5	38.5	58.1	18.1	9.7
Misc.....	61.1	51.4	39.0	27.7	18.0	22.1	3.8
Totals.....	1,364	696	871	634	450	491	103

The multiplication of these figures by the previously calculated division-days for each kind of division gave the tonnage required by the ground forces during each period of the campaign. To these were added the relatively small air force supply requirements, calculated separately from estimates of the number and types of German planes at the front during the several periods of the campaign and from U.S. Army Air Corps logistics data adapted to German plane requirements. The total German supply requirements for the campaign were then tabulated as follows:

TONNAGES REQUIRED TO BE DELIVERED AT THE RAILHEADS FOR GROUND AND AIR FORCES PER FRONT PER PERIOD
(Thousands of tons)

Front	Periods								Total
	I June 22- July 17	II July 18- Aug. 1	III Aug. 2- Aug. 20	IV Aug. 21- Sept. 25	V Sept. 26- Oct. 20	VI Oct. 21- Nov. 1	VII Nov. 2- Nov. 17	VIII Nov. 18- Dec. 6	
Northern.....	765	303	410	1,047	362	155	240	323	3,005
Central.....	1,531	994	785	530	1,201	499	616	885	7,011
Southern.....	854	480	638	2,327	531	263	429	510	6,032
Total.....	3,150	1,777	1,833	3,904	2,094	887	1,285	1,718	16,648

Transport Capacity

Of the several possible modes of transport, it was considered that the use of coastal shipping, inland waterways, and air freight would have been quantitatively unimportant during this period⁴ and that trucks would have been used only as a substitute or supplement for rail transport. The capacity of the captured rail network, as the core of the supply problem on the eastern front, was therefore calculated with great care.

First came the question whether the broad gauge of the Russian railroads would have created a bottleneck. Four possible German solutions to this problem—reloading at the border onto broad-gauge rolling stock, using adjustable axles, changing trucks, and relaying the track at standard gauge—were examined, with the conclusion that the last alternative, converting the gauge, would have been the one adopted. It was calculated that 1000 crews of 30 men each could have done this job in 20 days for the 25,000 km. of rail estimated to have been used in 1941, and that the discrepancy in gauge therefore did not delay the transport of supplies.⁵

⁴This premise was apparently correct. Halder made reference to a number of shipments on the order of one or two thousand tons coastwise to Riga and on Lake Peipus but implied that he did not count on these supply lines.

⁵This reasoning apparently coincided with German expectations. During the planning for "Barbarossa," as the Russian campaign was called, Halder noted (3 March) that a railway battalion can convert Russian track to German gauge at about 20 km. per day (at 200 working men to a battalion this is more than twice as fast as estimated above) and that these battalions should be in the van of the advance, right behind the panzers. But in practice the conversion cannot have been made so rapidly and completely. On 2 August, six weeks after the invasion, Halder gave as the number one reason for the persistent inadequacy of rail transport the shortage of Russian rolling stock, especially locomotives, and its poor state of repair. The only line he mentions having been completed in standard gauge (18 August) was that through the Ukraine (Chernovtsy) from Poland to Rumania. And as late as 5 December, toward the end of the period studied, he complained that the Russians had completely destroyed the repair shops for their locomotives and the German locomotives could not stand the cold, but reiterated that plans called for "the gradual elimination of the broad gauge." Both gauges must therefore have been in use for some time.

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It was determined that the captured rail lines usable to move up the German supplies were probably at first nine and then ten in number, six double-tracked and four single, one of the latter opened up only in mid-September. The number of trains that could be run daily over these were calculated, after extensive consideration of experience in other countries, reports on the quality of the Russian lines, and presumed wartime difficulties in their operations, to be an average 15 on single track and 45 on double as far as the major bases and 10 and 30 respectively beyond these to the advanced railheads. It was comparatively simple to estimate, from prewar German practice and experience in Europe and the United States, the carrying capacity (including service freight) of each train to be 480 short tons.⁶

From the number of trains that the rail net was thus estimated capable of carrying there were subtracted 55 trains per day for personnel movements—4,200 trains over the whole period for moving up reserves to the equivalent of 60 divisions,⁷ 1,875 for evacuating 750,000 wounded,⁸ 150 for evacuating 60,000 sick,⁹ and 937.5 for 1,125,000 on furlough¹⁰—leaving 165 trains per day to the advanced railheads when all ten

⁶ This is a bit high, according to a notation of Halder's (1 July) equating 9000 cubic meters of motor fuel with 22 trains. The net load of each train, 410 cubic meters of oil, would weigh about 335 metric or 370 short tons. The estimate's 480 reduced by 20% for service freight would be 384 short tons.

⁷ More than five times too high. The entire reserve force comprised only the equivalent of 11 divisions at the estimate's 27,000 men per division (Halder, 16 June and 2 August).

⁸ This is high. On 2 October, 18 days past the mid-point of the period, Halder counted 368,000 evacuated, probably both the wounded and the sick. The casualty count for 10 December has 580,000 wounded.

⁹ Not in addition to the wounded, but the figure seems too low. On 7 September, after only a month and a half of fighting, Halder noted that there should be added to the casualty figures 400 sick per division, a total of 56,400. Elsewhere he excludes the sick from casualty counts. On 21 November he observed that the current ratio of wounded to sick, formerly 1:4, had risen to 1:1.4, but these cannot all be evacuees.

¹⁰ Halder has nothing bearing on this figure, but one suspects it should be divided by about 10.

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lines were open and 275 to the major bases. From the tonnage these could haul at 480 tons per train there was deducted twenty percent for service freight. The supply deliveries thus computed were then compared with the tonnages required in each period in the table reproduced in part below:

(Thousands of tons)								
	Period I	Period II	Period III	Period IV	Period V	Period VI	Period VII	Period VIII
Delivery of Supplies to Major Bases								
Maximum available capacity for military supplies.....	No rail	100	100	100	106	106	106	106
Tonnage required at major bases..	trans- port	121	106	113	87	77	82	93
Surplus or deficit per day.....		-21	0	-12	19	29	24	13
Delivery of Supplies to Advance Railheads								
Maximum available capacity for military supplies.....	No rail trans- port	59	59	63	63	63	63	63
Tonnage required at adv. bases..		85	95	74	65	70	79	79
Surplus or deficit per day.....		-26	-36	-11	-2	-7	-16	-16

Conclusions

Rail transport thus appeared to be inadequate to meet requirements at the major bases in two periods, II and IV, and at the advanced railheads in all. It was assumed that trucks would have been used to meet these deficits, 30-ton trailers to the major bases¹¹ and 5-ton trucks from there to the advanced railheads. It was calculated that in Period II 2,553 30-ton trailers would have been needed, and it was thought probable that the number available was "greatly in excess" of that.¹² 10,683 5-ton trucks would have been needed to fill the big shortage at the advanced railheads during Period IV, but this was only 62% of those estimated to be available for the purpose.

¹¹ Halder makes several references to such supplementary heavy trucking all the way from Poland, but none after 24 August, about the end of Period III.

¹² In tons this would be 76,590 short or about 69,500 metric. On 26 April Halder gave the (presumably heavy) transport tonnage planned for Barbarossa's three fronts and GHQ as 67,240 (metric) but as early as 10 July noted that 25% of this was out of action. On 15 July the Center army group, which was having particular difficulty with rail transport, had 30,700 tons of heavy trucks mobile. On 5 March of the following year the total available tonnage was 50,000.

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An intensive inquiry was made into whether there was enough rolling stock to make the indicated number of daily train deliveries. It was reckoned that a train would travel on the average only 60 miles a day,¹³ and in the final period, therefore, when the distance was greatest, 162,300 cars would have been needed. But this was only about 10% of the cars in Nazi-held Europe, and they probably could have been made available without critical strain. It was noted, however, that as the Germans pushed farther into the USSR the supply of rolling stock might become a serious problem; the same tonnage delivered to Stalingrad would take two and a half times as many cars as to Smolensk. It was also noted, without development, that getting the skilled personnel to operate the roads in Russia may have been a problem.¹⁴

The climatic conditions on the eastern front were studied—mean temperatures, precipitation, drainage—from records of a score of years and comparison with areas of similar climate in the United States in order to determine when the weather and roads would permit the 1942 offensives to begin. The earliest possible dates were by this means calculated to be 6 and 15 April respectively for Rostov and Kharkov on the South front, 24 April for the Center at Moscow, and 9 May in the North around Leningrad. Attention was called, however, to difficulties encountered in operating railways in the winter, and it was suggested that especially on the North and Center the winter build-up might have been so impeded as to delay the spring drives or weaken them by comparison with the preceding summer's.

The net estimate with respect to the future thus made a weak nod in the right direction. In 1942 there were no major German offensives at all on the North and Center, and in the South they got under way a month later than the estimated earliest, 8 May above the Crimea and 17 May around Kharkov. Three times in January Halder had remarked that the trans-

¹³ In recording an incident of some lost and badly needed munitions trains, Halder (3 August) expected them when found to make it from Warsaw to Velikiye Luki (about 200 miles) in one day. He has nothing really bearing on the 60-mile average.

¹⁴ It had. Halder complained (4 December) that instead of 16 men per kilometer there were only 10, of which only one was German.

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port situation was "catastrophic," and on 18 and 21 March he was afraid that the way things were moving the build-up for the summer offensive would not be completed until August.

With respect to the past, what had happened in 1941, the estimate was right that there had been no over-all supply deficiency but that there had been temporary and local ones and that intervals of comparative quiet on the fronts reflected time required to build up supplies for a new push. But the aggregated figures for supply requirements and transport capacity supporting this conclusion were inflated by compound errors to several times those revealed in the Halder notes and other sources.

Validation

In the first place, the military intelligence figures for initial German strength were too high—195 divisions, about 5 million men, as against 141 divisions totalling 3.2 million men.¹⁵ Each of 18 panzer divisions was said to be equipped with 430 tanks, a total of 7,740, whereas Halder (22 September) gives the complement of a panzer division as 210 tanks. This would make 3,780 tanks for 18 divisions, but a generally accepted figure is 3,200, and Von Thoma says there were only 2,434 frontline tanks to start.¹⁶ On the other hand, cars and trucks estimated to be in the divisions' T/O&E's would total only 374,000, whereas Halder (18 November) gives the starting number of 500,000.¹⁷ But the estimate assumed that all these vehicles, as well as guns and other equipment, were replaced as they were expended except as it applied attrition to the total number of divisions, whereas at a time when cumulative attrition was figured in the estimate at only 2.5% Halder noted (11 September) that tanks were down 40%, cars and trucks 22%, and tractors over 30%. On 18 November, when the estimate counted attrition 12.8%, he recorded cars and trucks to be off 30% (and another 55% needing repair). By

¹⁵ Halder, 21 June *et passim*.

¹⁶ As quoted by Walter Goerlitz in *The German General Staff*.

¹⁷ The estimated number of horses, 589,000, was also a little low. Halder, when he noted that 1,100 were dying daily of the cold, indicated that the total had been 640,000 (7 December).

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the following March, according to one hardly credible statement, there were only 140 serviceable tanks left in all.¹⁸

When it came to ammunition requirements the error had snowballed to something like 800%, at least over one of the eight periods. Halder observed on 16 August that total expenditures of ammunition over the preceding 15 days amounted to 340 trains. At 370 short tons net per train this would be 123,800 tons or an average of 8,220 tons per day. The estimate's figures for division-days of each kind of fighting multiplied by ammunition requirements for each for Period III, 2-19 August, give 1,255,563 tons, an average of 66,082 per day. Yet for a particular sector during this period the estimate was three times too low. Halder remarked on 3 August that North was supposed to get 7 to 8 munitions trains daily, that is 2590 to 2960 short tons, whereas the report's tabulation showed a requirement in this sector at this time for only 920 tons.

The estimate of fuel needs was low in the one period we can check it. Halder complained on 26 September that the three fronts would get only 26 trains of fuel daily against requirements for 30. 30 trains would carry 11,100 short tons, 26 trains 9620; the estimate reckoned for this period division-day requirements that total only 6525 short tons, to which a small unspecified amount should be added for truckage from the railheads.

Over-all, the overestimates greatly outweighed the underestimates. An infantry division doing heavy fighting was calculated to need 1364 tons per day, almost twice the 700 tons Von Paulus, cut off a year later at Stalingrad in presumably much heavy fighting with the equivalent of *ten* divisions, said he would need to get by air, and not much less than the 1500 tons he said he'd later need when his stores ran out. Probably the greatest single source of error in estimating requirements was the unspoken assumption that except for the 12.8% attrition allowed in numbers of divisions the armies had been kept up to strength in men and materiel, whereas in fact they had fallen to about half of original combat strength.¹⁹ While

¹⁸ Wm. L. Shirer, quoting a German army report in *The Rise and Fall of the Third Reich*, p. 909.

¹⁹ Halder, 30 November.

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in some sense such replacements are a requirement, it had clearly not been planned to make them until the 1941 campaign was over.

In order to maintain the "approximate equivalence" the report arrives at between requirements and transport capacity it therefore had, in spite of overestimating the net tonnage carried by a train, to show a capacity for four or five times as many supply trains daily as there actually were. Halder provides a direct check in this matter. He did not distinguish between major bases and advanced railheads, usually tabulating train arrivals simply to the North, Center, and South army groups; but once (29 November) he specified Smolensk and Gomel, the major bases for Center, and once (7 August) he observed that heavy truckage could bridge the 400 kilometers to Leningrad, Moscow, and Poltava from the railheads, again clearly major bases. It is with the report's estimate of 275 supply trains daily to these, then, that we must deal.

Toward the end of July only 30 or 40 trains were arriving daily for all fronts. On 7 August Halder noted that the number should be increased to 58. By 11 September it was up to an average 59. At this point it apparently ceased to be a source of worry; there are no further diary tabulations until the time of the last desperate effort to take Moscow. On 29 November a six-day tabulation showed the Center getting an average of 2 more trains than in September, 31 instead of 29.²⁰ But on 3 December it was observed that of the total 122 trains daily in the east 67 would after 15 December be used by the Quartermaster General²¹ and another 13 for troop movements, leaving only 42 to supply the army groups.

In one of its major premises, at any rate, Halder vindicates the estimate. On 19 November he quoted Hitler as declaring that the objectives of the 1942 campaign, beyond the Caucasus in the south and Vologda or Gorki in the north, "must remain open; they will be determined by the performance of

²⁰ Including an average 6 or 7 "farther to the rear" than Smolensk and Gomel.

²¹ Presumably for wintering requirements, among them the 300,000 barracks which Halder had noted (2 August) were being built and would require 255 trains.

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our railroads." Imagine the effect on world history if his armies had really got 275 trainloads of supplies per day.

For all its failings this study, as a prototype, had important repercussions. It pointed up the lack of data and the fuzziness of estimates on enemy capabilities and so led to an expanded—now vastly expanded—effort in this field. The next step was to examine the European Axis economy to see whether it could support the war effort that had been presumed—steel, manpower, chemicals, petroleum, etc.²² The large economic intelligence organizations of today had their origins here. A further significant offshoot of the prototype, because of the detailed knowledge of the enemy economies and their civilian-military interplays gained in its successors, was a series of studies on target selection and target system appraisal for the bomber forces, the beginnings of air targeting as we know it now. Here military and civilian intelligence efforts began to blend in a fruitful combination that still continues. The operations analysis offices in part and much of the armed services' present intelligence shops, for example the Air Force Intelligence Center, find their roots here.

²²These studies led quite soon to modifications of several of the military consumption estimates discussed above. Within a few months the estimate of ammunition consumption was reduced by some 60%.

Achievements and undoing of a man of high, mistaken principle and unflagging, misspent energy.

THE PRACTICE OF A PROPHET

The public examination last year of the Lonsdale-Kroger-Houghton-Gee case of Soviet espionage in England¹ and its parallels with the Abel-Hayhanen case in the United States² bring to mind an earlier rather full public exposure of postwar Soviet espionage that was given a great deal of attention in the target country but is little remembered here—that of Ernst Hilding Andersson, whose skill, ingenuity, and devoted diligence gave the USSR a series of prize reports on Swedish naval defenses from 1949 to 1951.³ This was not a KGB deep-cover operation like the other two, but run from official cover by one of the Soviet military intelligence services without any of the elaborate technical devices Abel and Lonsdale had at their disposal. It is notable, among other features, for the way Andersson's security practices, at first exceedingly loose, were gradually tightened up until, although they never approached the scrupulous care exercised by Colonel Abel, they were about on the level of Lonsdale's. But while the Russian handler Lonsdale was blown by the indiscretion of his agent Houghton, security-conscious agent Andersson was caught through the ineptitude of an ill-trained young case officer sent out from Moscow.

¹See John Bulloch and Henry Miller's *Spy Ring*, reviewed in Intelligence Articles V 4, and Arthur Tietjen's *Soviet Spy Ring*, reviewed in Intelligence Articles VI 2.

²See W. W. Rocafort's "Colonel Abel's Assistant" in Intelligence Articles III 4.

³The story of this case is told in Curt Falkenstam's *Röd Spion* (Stockholm, 1951). English-language summaries are included in Francis Noel-Baker's *The Spy Web* (London, 1954) and John Baker White's *Pattern for Conquest* (London, 1956). All of these accounts lack some of the details that an intelligence officer finds intriguing.

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The Prophet Molded

Ernst Hilding was one of eight Andersson children supported on the proceeds of a too small truck garden at Strängnäs, not so far from the prosperity of metropolitan Stockholm as to be spared rude contrasts with their own poverty. Moreover, his father was crippled early on by rheumatism, so that the boy had to leave school when he was eleven and go to work in the neighboring farmers' fields. He did heavier work for longer hours than he had the strength for. He was an intelligent, oversensitive, and therefore lonely lad, something of an outsider even with his own family. His mother, who it was gossiped had Communist leanings, took in sewing to help ends meet. One of his sisters contracted tuberculosis. Another fell prey to some disease, probably syphilis, that incapacitated her mentally.

When Ernst was seventeen he went to Stockholm and got a job as delivery boy, living with a sister. As soon as he turned eighteen he joined the Navy—on impulse, he said, but knowing that he would not only be better off financially but have a chance to broaden his intellectual horizons. He began to study voraciously. For five and a half years he took night courses in technical subjects, specializing in electrical engineering. Still all his energies were not engaged, and when he found some fellow-sailors whose economic and social philosophy seemed to fall in with his own emergent ideas and these introduced him to others of their persuasion in the city, he joined them in the Swedish section of the Communist Youth International, his first taste of real comradeship. For two years, until sea duty took him away, he helped prepare and propagate their illegal newspaper *Torpeden*.

In 1933, at 24, he married a domestic maid. His wife appreciated his kindness and admired his industry and intellect, but she did not understand his ideas or share his interests. They came to live amicably but distantly together. Nevertheless, sixteen years later when she could afford to quit work, they had a son.

In 1934 Andersson was graduated as a chief machinist. Still he studied, especially electrical engineering but also a variety of unrelated subjects from artillery fire control to foreign languages. In 1950, 41 years old, he was certified as an

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electrical engineer. He was now what we would call a warrant officer. He had found life in the service satisfying—good treatment, plenty of opportunities, a promising future. Although he had no money to throw away, he was better off than most enlisted men. He had no gripes against any of his associates or any group of people. It pleased him to do a good job, and he did it earnestly.

But as the Soviet-American cold war came to constitute the mainspring of world affairs he was convinced that the future welfare of the Swedish people—and the rest of mankind—lay in "learning from the Russians" and that the main threat to Sweden came from the United States. He believed it inevitable that the Americans would sooner or later try to take over Swedish bases for an attack on the USSR, setting off World War III, and this thought horrified him; when it came to that he would much rather have the Russians occupy them as a preventive measure. He made no particular secret of these ideas, which, along with his passion for study, earned him among his fellows the nickname of "The Prophet." In these circles he was also sometimes branded Communist; but there was little informal contact, as in most navies, between NCO and officer ranks, and his officers thought highly of his abilities and his devotion to duty. He could be trusted in whatever work you gave him.

The Spy Matriculates

In the fall of 1946 Andersson was stationed, as he had been during most of his service, at the Skeppsholmen naval base, an island in the channel that cuts Stockholm in two. One evening at the home of his friend Sixten Røgeby, one of the men who had introduced him to Communism eighteen years before, he met Konstantin Vinogradov, then First Secretary of the Soviet embassy in Stockholm, who honored him by asking him to dinner at his home. At Vinogradov's there were just a few other guests, but food, drink, and hospitality such as only a Russian can lay on. Amid the general conversation there were enough references to Andersson's job and to the quality of the Swedish fleet that he knew to what proposal he was being led. He had his answer ready now, two years before the question was to be asked.

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Andersson accepted a second invitation to dine with Vinogradov one evening before Christmas, but it turned out he couldn't make it. No matter; on New Year's Eve the diplomat showed up unannounced at the sailor's west side apartment near the Traneberg bridge, bearing a gift of several bottles in honor of the occasion, and they made another dinner date for January. This time Vinogradov, introducing the only other guest, Tass representative Viktor Anissimov, announced that he was leaving the Stockholm post; and to complete the unacknowledged handing-over ceremony Anissimov invited Andersson to dinner at his apartment.

That dinner was the first of many meetings and the beginning of a close relationship that flourished for three years and a half. At first the two friends simply got together at one or the other's apartment; but it occurred to Andersson—as well, presumably, as to Anissimov—that it wouldn't be a good idea for a Swedish warrant officer to be seen going around with a Soviet representative, so they agreed to meet most of the time outside the city proper, where they might be recognized, in suburbs and outlying towns like Huddinge, Tullinge, Stäket, and Hägernäs. They would go for walks and bicycle rides and eat in restaurants or picnic in the country. After almost a year of this Anissimov once brought a camera along and took several pictures of his friend. Later he got Andersson to bring him his identity documents and a list of his naval service assignments, honors, and achievements. Still no demands, no talk of espionage, but in anticipation Andersson grew more reticent among his fellows about his political views and stopped his open Communist associations. He had never joined the Party proper.

Another year, and finally, at the end of November 1949, the Tass man asked if Andersson would be willing to provide some information on the Swedish fleet. The spy presumptive had had moments of doubt that year after his son was born: if he were caught and jailed for the rest of his life the baby might have as rough a childhood as he himself had had. But he had thought the problem through and decided that such sentimental, personal considerations had no weight beside the larger issues. Now he assented without hesitation. His handler then wrote down three questions: the names of the war-

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ships stationed at Skeppsholmen and the battle-readiness of each; future plans for reassigning or remodeling any of these ships; and the composition and command organization of the Swedish coastal fleet. He offered no guidance on how to get this information; the means were left to Andersson's initiative.

The first two questions, about his own base, presented no great problem. Stationed as he was on the destroyer *Romulus*, he knew most of the answers already, and he could fill in the rest by discreet and indirect questioning, often by saying something wrong and letting a colleague show his superiority by correcting him. He even included several of the small minesweepers attached to the base in his report. But on the coastal fleet he had little first-hand information. Nevertheless, by dint of diligent research and questioning, he learned the names of all the ships in it and could make some observations on their divisional subordination. Before the end of December he wrote out his report in pencil on board the *Romulus* and took it with some pride to Anissimov's apartment. Anissimov barely glanced at it, set a date for a meeting in January, and told him he'd better go.

In January the Tass man began by expressing his dissatisfaction with the report: it didn't include data on *all* the minesweepers! Andersson, hurt, resolved never again to put himself in a position to get such a reprimand; and he never did. The rest of this meeting and others for the next five months were devoted to tightening up security procedures and training in them. Reports were to be done in invisible ink, a sodium sulphate solution. All meetings were to be at 8 p.m.; the day would be signalled by disguised chalkings on a wall or building, "T" for Monday, "W" for Tuesday, etc. If a meeting ever failed, it would be tried again exactly two weeks later at the Karolinska Hospital. Against the possibility that Anissimov might have to send a substitute handler, Andersson should make himself recognizable by carrying a briefcase, lock side out, in his right hand, with a roll of paper sticking up out of it. For mutual recognition there were four key words that should be used in the opening sentences, two on each side, of a self-introductory conversation. The left hand in pants pocket would be a danger sign.

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Busy Days

In May Andersson learned that he was to be transferred to the icebreaker *Ymer*, which was sailing south on 10 June for an overhaul at the Karlskrona naval base. A meeting with Anissimov had already been set for 27 May, and here Anissimov presented him with a written request for a repeat of the report he had made in December; it seemed the Russians wanted this updated semiannually. Andersson wished he had saved his notes for the first one, and after that he did. In addition, this time, he was asked for full details about security arrangements at Skeppsholmen, including shelters, stores, and supply depots, together with a sketch covering all installations. He would now have less than two weeks to complete the assignment. When he told the Russian about the *Ymer* he was given as a subsequent assignment the job of reporting much the same things about Karlskrona as he was doing for Skeppsholmen, but with more sketches and covering additional subjects such as communications facilities and foreign representatives or visitors at the base. He got 400 kronor (about \$100) for expenses; no receipt required, but he would have to account for it when he submitted his report.

He continued to have trouble with the coastal fleet in preparing his second report, but he did a smashing good job of the required Skeppsholmen sketch-map. He bought an ordinary streetcar map of the island, enlarged it, sketched the three dozen or so important buildings in to scale, and keyed these by numbers to an attached description of each. Most of them he had been familiar with before, but he made it a point to visit a typical bomb shelter and note things like the locations of its entrances, the thickness of its roof, and its resistance to gas. He copied the map and his eight-page report in invisible ink, and on the day before the *Ymer* sailed he went to a bicycle stand on St. Erik's Terrace, found Anissimov's bicycle, as agreed, parked there, and put the apparently blank papers in its tool case.

The *Ymer* was docked in Karlskrona for over three months, until 14 September. Plenty of time for observations and questions, which security-wise were easier than at Skeppsholmen: it was natural to be curious when you hadn't visited a place

for three years. But Andersson didn't therefore take it easy. He used his lunch hours to wander about the base, refreshing his memory, observing changes, and taking mental notes, and his longer periods of free time were spent in excursions in the area, notably to prominences on the mainland and islands in the archipelago surrounding the base. He would study maps and hydrographic charts, try to figure out the logical places for military installations, and then go verify his guesses. He usually went in civvies on his bicycle, having given out among his acquaintances that he was fond of picking berries and mushrooms.

He would keep all his observations in his head until he got back to his quarters and could sketch them; there was too much danger that someone might become suspicious and set the police on him. Twice, in fact, he was accosted. Once an MP sergeant asked him what he was doing there. He said he was looking for the personnel office, trying to get on as an engineer in Karlskrona; and the sergeant, though he still looked suspicious, let him go. Another time, when he was examining defense erections on one of the islands, a man came up and asked him why. Andersson, who had just had a couple of bottles of beer, said "I'm spying for the Russians." The man stared and shook his head and went away.

He found hanging on plywood in the Karlskrona base's electrical shop, where he frequently went on business, a big map of the dock and base area, as well as part of the city, with numbers keying some 800 installations to a legend and flags indicating the location of all ships being worked on. He persuaded the electricians, since, he said, his comrades on the *Ymer* were having an awful time finding their way around the base, to lend it to him as a guide for the icebreaker's crew. He hung it up on deck and then, choosing times when the crew were all busy elsewhere and keeping a sharp lookout, he copied it in four sections as the basis for his report. In the two months it took him to complete it, he tripled the number of original notations with additional observed detail. He hid his sketches and notes in an old pair of field boots. He went over the notes again and again, memorizing and compressing, until there were only three or four cramped pages, mostly figures, beside what he had in his head.

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Two or three British destroyers called at Karlskrona that summer of 1950. Andersson observed them closely and succeeded in getting aboard one of them and talking to the crew. He asked them what they thought about the world situation, the next war, and the Russians and what the British were doing in the Baltic.

Back in Stockholm in mid-September, he worked far into the night for many nights expanding his report and putting it into secret writing. He had previously agreed to meet with Anissimov during the third week of that month on a not yet specified day at 8 p.m. in Örby, a suburb on the south of the city containing a small forest. Now he put a red chalk mark on a building near the Tass office to indicate the day. He traveled to the rendezvous by bus, Anissimov by taxi, and the two walked into the woods, where Andersson handed over his 20-page report with map and sketches and his expense account. He told the Russian about the risks he had run in copying the big map of the base and suggested that he could have avoided these if he had been sure of being able to make a satisfactory photograph of it. As personal chitchat he mentioned that his baby had just got over a serious attack of bronchitis, and the hospital bill was terrific. Anissimov promptly lent him 400 kronor, which he later gratefully repaid. They decided that Stäket, fifteen miles northwest on the way to Enköping, would be the best place for future meetings, and they set a date for the next one. Then they rode back to town together.

New Skills and Voyages

They rode to Stäket on the same train but ignored each other until they had walked from the station out into the countryside. Anissimov said he would be leaving Stockholm sometime before the spring of 1951, so at some future prearranged meeting it would be his successor that would appear, to be recognized by the prescribed procedures. Andersson for his part reported that in December the *Ymer* would be sailing up the Norrland coast on ice-breaking missions, and he would be the ship's chief electrician. He was therefore given, in addition to the semiannual Skeppsholmen report to prepare before he left, written requirements for information on Norrland coastal fortifications, ports, and likely landing areas near im-

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portant centers and military installations. But more generally he was to observe and report anything that might be of intelligence interest; his judgment was now trusted.

Most of the five- or six-hour meeting, however, was devoted to photography. Anissimov had brought along a small Exacta for Andersson to practice with under his direction. He gave him 1200 kronor to buy one like it and presented him with two handbooks, one in German and one in English, on document photography. Since the *Ymer* would be gone five months, the next meeting, presumably with a new handler, was set for 4 June. The next day Andersson splurged on 2000 kronor worth of photo equipment, including a telescopic lens and materials for developing and printing his own pictures. He threw himself with characteristic energy into mastering the new art, both by practicing all its aspects and by research in the City Library.

Concurrently he was preparing his routine Skeppsholmen report, not hurriedly because he thought he had plenty of time. But suddenly the *Ymer* was ordered to leave a week earlier than planned, on 6 December, and he had to work frantically. He stayed up all night putting it into writing before the morning she was to sail, and barely a couple of hours ahead of departure time he rushed across town to Anissimov's apartment and handed it to him personally. He would never see him again.

On board the *Ymer* he let it be understood that he had won the camera in a lottery and had become engrossed in his new hobby. He enthusiastically took pictures of the ship, the crew, the scenery, sea gulls, everything that came by, and incidentally of coastal features for his report. With the captain's permission he set up a dark room in a lavatory in the sick bay. When the ship made an ice run up the Ångermanälven river as far as Gustavsvik he was able to photograph the defense establishment there. Aside from photographs and his own observations he picked up a good deal of incidental information. One day, for example, when an officer and two NCO's hitch-hiked a ride down the coast on the *Ymer*, they pointed out where work was being done on fortifications to which thirty-odd men would be assigned.

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At the end of March 1951 the *Ymer* returned to a secret bunker in the Stockholm archipelago for refueling. Here the *Exacta* got six or seven good pictures showing its approaches, defenses, and the entrances to its rock tunnels. Moreover, Andersson took advantage of the fueling stop to strike up a conversation with some of the men stationed there and learned how many ships the bunker serviced, what thickness of rock lay over the tunnels, and what kind of fuel was stored in each of the various compartments.

For the first half of May, after the ice became workable in the northernmost tip of the Bothnian Gulf, the *Ymer* was stationed up in Luleå. Here the ship's NCO's were invited to dinner by the NCO's of the local airbase, F 21. Andersson was able to observe F 21's bunkers and defenses and took advantage of the friendly social conversation to learn the number and types of planes at the base and get some notion of their operational mission.

A few days before the icebreaker was to leave Luleå the officers and NCO's from F 21 and other airbases in the area were invited on an excursion up the river to Boden to tour the fortress there. Through Andersson's good offices the *Ymer's* NCO's were included in this invitation, and he and two others went along. The party was taken on a guided tour of the fortress area and through one of the forts and given explanations of present and planned dispositions. Although he had had to leave his camera outside and could not make notes, Andersson was able by intense application to observe and memorize a mass of detail about anti-tank obstacles, the location of gun batteries, the caliber of guns, the power of the diesels, the construction of the armored turrets on the forts, tunnel entrances, camouflage devices, and many other features. He could even make an educated calculation of the strength with which the place was manned. As soon as he got back to his ship he wrote all these things down.

A New Regime

When the *Ymer* got back to Stockholm he bought three General Staff maps covering the Luleå and Boden area and used these as the basis for maps for his Norrland report, which filled twelve pages and was accompanied by three or four hundred photographs. He was so busy doing this, he

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later explained, that he completely forgot the 4 June meeting arranged with his handler; but one suspects that the repugnance he felt at being taken over from his admired friend Anissimov by a stranger may have interfered with his normally acute memory. At any rate he got a telephone call at home the next evening with "greetings from his friend" and agreed to arrangements for a meeting at the same time and place the following day.

The new handler, it turned out after the recognition ritual, was 26-year-old Nicolai P. Orlov, a clerk for the Soviet naval attaché. His head full of the precepts taught in the Operations Course he had just completed, he laid down some new procedures. These risky personal meetings would be the exception. If Andersson had a report to deliver, he could request by three vertical red chalk marks that Orlov's bicycle be left on St. Erik's Terrace, as Anissimov's had once been, to receive it. He could start by delivering the Norrland report this way. Alternatively he could hide a report under a certain rock in the woods around Frescati, on the northern outskirts, and signal by a horizontal white chalk mark that it was there. Orlov would use counterpart procedures for transmitting assignments and pay. Punctillious about the pay aspect, he asked if 700 kronor would do for the immediate future, which would be devoted to the semiannual Skeppsholmen report.

Andersson completed this routine assignment handily before the end of June and left the report in the bicycle tool case on St. Erik's Terrace. He didn't like this impersonal means of delivery as a regular practice, especially in such an open spot where he could easily be observed. He resolved to protest it, and he soon had a second reason to signal that he wanted a meeting with Orlov. He had been scheduled for transfer to the destroyer *Öland* that summer, but now two alternative possibilities opened up, a well-paid engineer assignment in the electrical section at Skeppsholmen or a course in radar which could lead to running a radar station. He was attracted by the engineer pay but decided that he could be more useful to his other employers if he took the radar training, and he wanted to tell Orlov about it.

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They met in Stora Mossen out in Bromma, not far from where Andersson had used to live. They agreed that in the future Orlov would park his bicycle by the busy shops under the viaduct at Tegelbacken and Andersson would pick it up and ride it down to the Southern Hospital and leave it there; thus he could do his business with the tool kit at any opportune point along the way. Orlov approved his decision on the radar course and promised that he wouldn't suffer financially. A few days later he received an envelope containing 200 kronor.

Last Mission

It apparently hadn't occurred to Orlov that his ostensibly aimless wanderings on foot and bicycle didn't conform with the normal activities of Soviet embassy personnel, but it occurred to the Swedish security police, especially when he went out on bicycle and came back on foot or vice versa. His shabby vehicle, moreover, was distinguished by a flashy new tool kit. They began to follow him discreetly on these expeditions. On the evening of 11 September they saw him park the bicycle at Tegelbacken and go away, and they took the opportunity to search it. They found in the tool kit two sheets of blank paper rolled and tied with blue and gold string, each enclosing several 100-kronor notes, a total of 1200 kronor. They tied them up again and put them back and watched. The next morning they saw Andersson come and ride the bicycle away, leaving his own in its place. The tag on it identified him.

The paper around the money, Andersson found, contained instructions for him to go to Karlskrona and report what he could about a fleet of British submarines visiting there. He asked for emergency leave, saying he had to go to Nässjö on urgent personal business, and took the morning train on 13 September straight through to Karlskrona. He traveled in civvies but took his uniform, as well as his bicycle, along. He spent a day finding out as much as he could from friends, then went in uniform to the quay where the British ships were tied up and engaged the crews in conversation. In the afternoon, as a civilian, he succeeded in joining one party that was taken aboard a submarine and another that was shown around a delimited area of a sub tender. On the latter he

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told the guard he had been invited down below by one of the crew and so managed to gain admission to the restricted area also.

Returning to Stockholm, he prepared an eight-page report and on 20 September rode Orlov's bicycle from Tegelbacken to the Southern Hospital. The police, finding the eight blank sheets wrapped around the pump, succeeded in developing the writing and discovered that it conveyed information not only on the British submarines but on Swedish warships currently at Karlskrona, their armament and prospective missions, the strength of the coast artillery regiment there, and the disposition of the internal guard at the base.

Andersson was arrested the next morning on his way to work. At his trial he was calm, straightforward, and unhesitating in his testimony. He had acted, he said, only as a Swedish patriot should: "I wanted to do as much good as I could with as little harm as possible." "Harm?" asked the prosecutor. "Yes, harm for mankind, and in that I include also you who judge me here," he answered. And when an unperceptive lawyer asked him whether he had never tried to fake his reports, he was offended. "That would have defeated my purpose," he said. "I always tried to make correct reports."

He was sentenced to life imprisonment at hard labor, the latter a thing not strange to him.

INTELLIGENCE IN RECENT PUBLIC LITERATURE

CONTEMPORARY U.S. INTELLIGENCE

THE LITTLE TOY DOG. By *William L. White*. (New York: Dutton. 1962. Pp. 305. \$5.75.)

This is the story of the RB-47 shot down by a Soviet fighter in the Barents Sea with six men aboard, of the rescue-capture of the two survivors, Captains Olmstead and McKone, of their life in Lubyanka prison and their interrogations, and of their return to their families seven months later. The toy of the title was a farewell token given the pilot, Major Palm, by his daughter before he took off on his last flight and listed among the missing when his body was recovered. Defending this "sad, drab little title," the author writes that he, with his collaborators the McKones and the Olmsteads, hope that it "may help a few readers to hear—over the crashing of 20 millimeter cannon in the shoot-down, over the Communist shouts and table poundings in the interrogations, and over even the joyous roars of the final welcome home—the sob of a child for a lost father." He is successful in presenting the human side of the story and especially in portraying, largely through her own words, the unreconciled bewilderment of the pilot's French-born wife: "This is not very patriotic, is it? When I had a live husband, I could be much more patriotic." And elsewhere:

So I blame God—whom else? Because you run out of people. Thy will be done. But when Timothy is old enough to ask such questions, I think I shall take him to whoever is then President, and I shall say, "Please explain to our son why this was allowed to happen, for I cannot."

The same empathic faculty that Mr. White displays in reminding us, sometimes quite movingly, of the personal tragedy eclipsed by the intelligence and international political importance of the case enables him to treat these aspects too with unusual discernment. In interjecting—rather unnecessarily—a chapter comparing the Powers and Abel crimes and trials he picks up some generally current factual errors, but his discussion is an enlightened one, seeing things from all the varying viewpoints of the respective defendants, their

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prosecutors with such different concepts of justice, their own governments, and even the critics who demand "a sacrificial goat to atone for every defeat." Of the latter, after a fair presentation of their views, he respectfully asks, "Might it not turn out that Francis Powers and all involved in this are competent and honorable men, striving to serve our country under fast-changing circumstances?" Similarly he can see the RB-47 incident not only from the viewpoints of the crew and the government that sent it out, but from that of Red Army pilot Polyakov, the interrogators, and the Soviet government.

In this process he arrives piecemeal at the explanatory thesis that Captain Polyakov made an honest mistake, perhaps by confusing the two capes that lip on east and west the entrance to the White Sea, in believing that the RB-47 was inside Soviet territorial waters and entering the White Sea in the direction of Arkangelsk when he accosted it and was turning to flee when he shot its near port engines away. The Soviet authorities of course took his report at face value, and all the initial interrogations were bent on extracting a confession of its truth. The firmness of co-pilot Olmstead and navigator McKone, however, along with the radar track displayed in the United Nations, gradually convinced the interrogators and their superiors, the author believes, that the plane was actually fifty miles out and making a left turn scheduled in its flight plan. In a 10 October interrogation it was apparently Polyakov's story that was being questioned by the Military Procurator General. Khrushchev decided about this time to free the men when he could do so as a gesture of "good will," but that meant only after President Eisenhower had left office. During the remaining three or four months the interrogations and liberties allowed the prisoners were aimed at putting the best possible face on the discredited charges, trying to extract technical data, and making propaganda.

The interrogations themselves as reported here, some rather fully, are worth the attention of intelligence officers who have not seen official accounts of them. An amusing series began with sudden violent charges that Olmstead, who knew no Russian, had been going to bail out in the USSR and pass himself off as a Soviet citizen while spying for Allen Dulles.

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These derived, it turned out, from a guard's mishearing a bit of American vulgarity from the prisoner and reporting it as a Russian expression so coarse that no foreigner without special training would likely have known it.

THE U-2 AFFAIR. By David Wise and Thomas B. Ross. (New York: Random House. 1962. Pp. 269. \$4.95.)

This is another of the recent spate of books which purport to reveal the inside story of secret operations and which gain some credence as authentic while intermingling fact and fiction without distinguishing between them. Its authors, two young newspapermen, have supplemented the information on the U-2 operation available in the open record with material derived from numerous interviews but have then added their own—almost uniformly incorrect—inferences and inventions, presenting these as facts. They write in a popular style, using flash-backs and the technique of juxtaposing simultaneous events from different geographical locations, and their book would be harmless enough as light reading if it had been honestly acknowledged to be a fictionalized version of a major incident in contemporary history.

To the extent that it is accepted as authoritative, however, *The U-2 Affair* can work against the public interest. Although it does not develop or support any particular theme and, as one reviewer put it, really "fails to jell,"¹ it conveys a distorted impression of the historical significance of the U-2 exposure by failing to grasp the extraordinary importance of the long successful intelligence operation thereby terminated. The kind of damage this distortion can do becomes evident when a widely read columnist quotes a "sober conclusion" from the book to support his rhetorical question whether the intelligence tail wags the national policy dog.² A true telling of "the remarkable story behind the most explosive espionage case of the twentieth century" would show that the wobble of embarrassment brought to policy by the operation as it closed was insignificant beside the mass of sustenance delivered theretofore.

¹ John Chamberlain in the *Wall Street Journal*, 21 May 1962.

² Marquis Childs in *The Washington Post*, 21 May 1962.

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AROUND THE EDGE OF WAR. By John Forth Amory, pseudonym. (New York: Clarkson N. Potter. 1961. Pp. 185. \$4.50.)

The pseudonymous author here presents a "new approach to the problems of American foreign policy" which goes something like this. Under the present nuclear stalemate the key to victory in our struggle with the USSR is support from the masses of people around the world, particularly those in underdeveloped countries where hitherto submerged majorities are or will eventually be engaged in "folk war" against exploiting minorities. Because the leaders of the emergent peoples all profess some simplified form of Marxism, it was impossible for the U.S. government during the Marxiphobe hysteria of the fifties to side with them against the exploiters; but more essentially the mutual dependence of U.S. overseas investors and the oppressive minority cliques upon each other continues to keep us on the anti-popular side. The USSR has picked up the "people weapon" thus abandoned, and this accounts for our mounting series of defeats.

The administration that took office in 1961, Mr. "Amory" says, was sufficiently enlightened to recognize the problem, but still too imbued with double-think to see the obvious solution—supporting the people against their privileged oppressors. It has therefore resorted to palliatives like trying to "democratize" the tyrant cliques and offering them counter-insurgency aid. These are not the real answer because you cannot turn wolves into bell-wethers and you cannot fight guerrilla fire with anti-guerrilla fire unless the people are with you; but they may serve to stem the tide of upheaval until we can form a new policy, if we will. We can turn and ride with the tide instead of against it without letting our overseas investors down too badly by backing an insurance program for overseas capital and by encouraging the present and inevitable trend toward replacing capital exports with exports of services.

The new policy, he goes on, and indeed any efficient pursuit of the old, requires a shake-up in the instruments of policy. Of these, in addition to the new unconventional warfare program, there are two—intelligence and propaganda. USIA is

ineffective because it addresses itself to the exploiting minorities, seeking to convert the righteous. CIA is ineffective because, since the ideological panic of the fifties, all its employees must have either a spotless record of conformism or a baptismal certificate in the Roman Catholic Church. This right-wing fanaticism prevents it from developing sources outside the minority cliques and the defeated survivors of ideological conflict in central Europe and also from using double agents such as the British take advantage of.³ CIA personnel should be replaced from top to bottom.

It is evident that the author, whom his publishers call "a strategically placed Washington expert," is not expert in the workings of the two government agencies he discusses (curiously, he does not mention the State Department as an instrument of policy). He has hold of an important idea, but he presses it with all the black-and-white dogmatism and misinformation that he accuses the right-wing fanatics of using, and he clothes his oversimplified theory of social dynamics in an infelicitous, stereotypic jargon.⁴ If his identity is worth a search, one might look for a fervent Jeffersonian and F. D. Rooseveltian who has some bookish knowledge of the U.S. government and of big business and who entertains a particular sympathy for Indonesians, having had opportunities to discuss with them their philosophy of social change—a neoacademic sort, probably juvenile or with development arrested at the simplistic stage, possibly an instructor in some local college course for fledgling foreign service officers.

³ "Amory" suggests that George Blake may have been a British-controlled double agent, exposed by the Russians when they became suspicious of him and given such a severe sentence by the British only to avoid a tacit acknowledgement that he was under their control.

⁴ He coins the term "diacianism" for the simplified Marxism of the emergent leaders, citing the ancient Greek infinitive *διακλάνειν* as meaning "to break through." He should be told that one does not form derivatives from an infinitive, with its characteristic n-sound at the end and frequent corruption of the root, but from the root or a tense stem. The root here is *κλάν-*, retained in such English words as cataclasm and iconoclast, and his derivative, if he insists on this verb, should therefore be "diaclassism." But the verb did not mean "break through" in his sense—prefixes are a bit tricky for amateur philologists—but "break in two" and so is unsuitable for his purpose anyway.

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U. S. OPERATIONS IN WORLD WAR II

A SPY IN ROME. By Peter Tompkins. (New York: Simon & Schuster. 1962. Pp. 347. \$5.50.)

This is that rarity, a real spy story written by a real spy. It is a classic in that it portrays—against a background of political idealism and a controversial military campaign—the best and the worst of operational and intelligence technique, like a perfect training exercise.

Tompkins was sent into Axis-held Rome by General Bill Donovan on short notice a few days before the Anzio landings in order that an American might be there as OSS representative—according to Tompkins, as OSS chief—ready to receive the American forces as they entered the city, as they were expected to do a few hours or days after landing. His was not meant to be a long-range clandestine mission; it became that when “Shingle,” the Anzio operation, stopped at the beachhead. It was strictly a personal mission ordered orally by Donovan—as Tompkins says, “no signed military orders, no red tape, no protocol”—like several other special Donovan missions in the Mediterranean Theater whose presence frequently confused the regular OSS organization in the area. OSS was still a new venture, and Donovan had been stung by its fiasco in the Sicilian campaign, when he, going in with the invasion forces, found himself to be the first OSS man there. He was now anxious to prove the OSS in the eyes of the military commanders, not merely by a growing volume of increasingly professional intelligence production, but by some spectacular performance.

This was why Tompkins was ordered into Rome. He was well qualified for the mission by his long prior residence there, by his training and experience in OSS, and, as it turned out, by his temperament—his courage, his sense of the dramatic, his journalistic flair. He “disappeared” from his case-officer job with the OSS Fifth Army Detachment in Naples and was landed by PT boat from Corsica. Once inside Rome, he made contact with an indigenous OSS intelligence net and also with a group that was beginning to mount the main Italian political resistance to the Germans, the nucleus of the later powerful Committee of National Liberation, whose intel-

ligence, sabotage, and escape-evasion activities were to do so much to paralyze German movements throughout northern Italy and ultimately lead up to Allen Dulles’ “Sunrise” coup, the surrender of all the German armies there.

But the Allies did not reach Rome, and Tompkins’ short-term mission stretched into weeks and months. He scrapped the sabotage and counter-sabotage plans designed for the moment of Allied entry and instead built up a highly productive intelligence reporting network. He broke with OSS agent Coniglio, whom he mistrusted—Coniglio was not clear about Tompkins’ mission or happy at his presence in Rome—and developed an intimate collaboration with the Socialists and the growing CLN, whose sources included Italian, Austrian, and Balkan ex-Socialists in the German and Italian armies and civil commands. He helped systematize the collection and collate the raw data received. The information the CLN produced was remarkable. It went via Tompkins’ radio simultaneously to the OSS Naples headquarters and the OSS team at Anzio.

Then came the blows—the capture of one of his key agents, the heroic Cervo, and the loss of Vittoria, his all-important radio set. With this begins the melodrama-like story of his efforts to survive, reorganize, and regain contact with Naples in the incredible Roman environment of the “Open City”—a setting even more ideal for espionage and the hare-and-hounds of clandestine existence than say Orson Welles’ Vienna of “Third Man” days. It took nerve, it took guts, it took luck; and Tompkins had them all. This part of his book makes a first-rate story for anyone, professional or layman.

The account Tompkins publishes here is based on a diary he kept while in Rome. His daily notes were smuggled into a hiding place in the Vatican, from which they were recovered and assembled after Rome was occupied. This diary is a fascinating document—raw in content and in language, vivid, and illustrated by photographs of the places and some of the people involved. Aware of the drama in his mission and realizing that if the diary (and he) survived, he would have the basis for an exciting novel, he consciously made it more than a factual record of his operation. He also let off steam in writing the daily entries and so left an excellent psychological

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study, giving insight into his mental processes and reactions and recording frankly the lapses in his morale, his enthusiasms and frustrations, his admiration of others' courage, and his own emotions, at times his plain fear.

The diary reached Donovan late in 1944, but it never became an official report. Donovan did not wish its controversial aspects, such as its complaints and accusations of operational ineptitude and crossed signals, to be made a part of the OSS record, at least until they could be investigated. In addition, he felt that Tompkins' revelation of some of his private thoughts at the time and his description of some personal night-time aspects of his clandestine life were perhaps unnecessarily graphic. I recall at least one such description that anticipated *La Dolce Vita* by 15 years; in the book this is toned down to almost casual matter of fact.

But the story of the *Spy in Rome* is dramatic enough without such episodes. The flavor of the diary comes through amply, and for the layman the book is far easier to follow because it omits or summarizes some of the technical details in the original. It could profitably have included, however, some of the many photographs in the diary to supplement its well-done maps of Rome and the Italy of 1944.

From the professional standpoint there is much food for thought in Tompkins' narrative, and in his observations and complaints. Here the singleton American agent, one of the first to be sent clandestinely deep into enemy territory, had been a case officer in the theater headquarters, active in recruiting and training agents, making plans for intelligence penetrations, and fighting to gain support for his proposals. As an agent in Rome he was acutely mindful of the confusion, rivalries, and give-and-take of headquarters life, and he was consequently suspicious of any instructions or arrangements that did not seem logical to him. The lesson, perhaps, is that the desk officer should not be made an agent. (Incidentally, does a former staff agent make a good desk officer?)

Some of Tompkins' numerous complaints, outright accusations, and disparaging comments are worth examining; he often hits home, as for example in describing the inexperience of the OSS theater headquarters command and the numerous "colonels" whose business seemed only remotely relevant to

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front-line operations. As OSS's theater headquarters moved to Naples from Algiers, the active detachment based there which had come in at Salerno with the Fifth Army—another had come via Sicily through Taranto and Bari—felt some of the resentment natural to an advance element when the order and the orders of a higher headquarters arrive to take over. There is no denying the gap that existed between the frequently changing officers of the rapidly growing headquarters and the members of the advance detachments.

From another angle, Tompkins was deeply involved in the internal friction in OSS between what he calls the "Mafia" elements of the Italian Secret Intelligence desk and other elements concerned with the Italian campaign. The whole story of the little Italian SI, to all intents and purposes an organized clique that frequently claimed credit for the work of others and spread confusion as to which of its assets were real and which were notional, is one of the unsatisfactory sidelights in the OSS record. But beyond this he feuded with others in his own Fifth Army Detachment, both on political and on practical issues.

Tompkins' vigorous quarreling raises the perennial question of how to reconcile individual enthusiasms with organizational discipline. Tompkins was an individualist and an enthusiast. Many of us in the Theater shared his anguish at the political compromises that were made with former (we believed them still to be) foes, as though the success of our Vichy gambit had become an *idée fixe* in our policy makers. We resented any coddling of those in North Africa and Italy who had opposed us. It was hard for us to understand the keeping of Admiral Darlan in power in North Africa and not removing ex-Vichyites from lesser offices. Then there was the practice in regard to civil affairs during the Sicilian campaign whereby our troops frequently went out of their way to keep the Fascist mayors and police chiefs in office so as to maintain order. All of this was shamefully capped in our eyes by the deals made with the discredited Italian King and Marshal Badoglio. Our political fervor may have been the product of youth or immaturity, but it seemed all-important to us at the time—and it helped excite and maintain our high energy, morale, and enthusiasm. In retrospect, it was a mani-

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festation of the quasi-religious drive that seems to stir supporters of revolutionary ideologies: this was our revolution.

Tompkins' book reflects this attitude strongly, if not quite as ardently as his original diary. He questions the wisdom of using former partisans of the enemy as agents merely because they know the enemy and can therefore circulate in his midst. He opposes to these the anti-totalitarian political movement, with its open and underground resources, as a proper source and partner even at the cost of any traditional operational control except that created by a comity of interests. This issue was at the root of his feud with "Captain A," an older French intelligence "pro" who had helped materially in operations prior to the North Africa landings and subsequently served as a consultant to the OSS Fifth Army Detachment. Tompkins blamed all things, most notably Naples' doubts about the reliability of his intelligence reports, on "Captain A," who in reality never had the influence that he ascribes to him.

In all fairness, Tompkins should concede that it is hard for a headquarters to evaluate the already edited reports of an underground political organization such as the CLN was in those days, reports whose sources are unknown and whose plausibility cannot be judged from a distance. The fact is that the general reliability of the CLN-Socialist tactical information forwarded by Tompkins was established in the first few weeks of his mission; it became accepted just about the time his radio was lost and his organized effort disrupted. With respect to intelligence bearing on the Anzio operation, among OSS officers it was believed that the Allied army could advance into Rome directly from the beachhead, because agents and partisans reported that there was no organized German military capability directly south of Rome. General Lucian K. Truscott, however, has argued convincingly from a military standpoint that the inability of the invasion forces to capture the heights of Colli Laziali made a sweep into Rome impossible, and he should be given "equal time" somewhere to rebut Tompkins' comments on this matter.

Some more general observations of Tompkins', such as those on air drops to resistance groups, have validity today: what actual use the weapons dropped are put to may be less impor-

tant than the morale effect of simply receiving them. Similarly his note on the ineffectiveness of trying to cut railroad lines by bombing marshalling yards instead of open track.

Tompkins has tried to simplify for the public the names and numbers of his contacts, but he is also confused on some details. He gives, for example, "Ingeniere" as the name used both for double agent Sorrentino (p. 153) and for a captured British colonel (p. 277). The fact is that there were many details concerning his mission that Tompkins himself did not know and still does not know—the real circumstances of his feud with "Captain A," the reason for his confusion about how he was landed, what happened to his messages sent through the British chain, the role of Coniglio. But again, the whole situation was confused, and no one may ever know the answers to some of the questions he asks.

At least Tompkins reached his target, he reported valuable intelligence, and he lived to tell the tale. His was one of OSS's really successful singleton U.S. agent missions, one whose tactical intelligence production was of definite assistance to the Allied military effort in Italy at a critical time.

NOW IT CAN BE TOLD. By Lieutenant General *Lestie R. Groves*. (New York: Harper. 1962. Pp. 464. \$6.95.)

This story of the Manhattan Engineering District is not the unfolding suggested by its Madison Avenue title of the drama that lay behind the explosion of the first three atomic bombs in 1945, but a source book, as the author's foreword in effect declares, for future historians, for managers of massive projects, and perhaps for dramatists. In stricter sense it is General Groves' accounting to posterity of the correctness with which he discharged his huge responsibility, a responsibility he felt so personally that he tends to reverse the normal courtesy precedence of third person over first—"I and my representatives"—and the reversal seems appropriate.

Like all such accountings, it is full of credit and debit entries (with "I was wrong" set just as stoutly down as "I was right"), of measured quantities of praise and blame for individuals—the latter usually anonymous, like the OSS agent who was found to have fabricated his reports of contacts with

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scientists in German-occupied Rome and the MED officer who directed that the Japanese cyclotrons be destroyed—and of the intricate minutiae of transactions that often seem trivial to the reader not involved. Yet some of the drama does come through—the commitment of billions of dollars and top priority to a project that had only a theoretical chance of success, the building of great, expensive facilities for alternative processes because no one could say which, if any, might really work, the designing of a weapon that might be ten times more or ten times less powerful than the best guess, the high tension at Alamogordo before the test and the dazed awe at its success, the rush into action the moment there was enough material for one bomb, and vindication of the prediction that two bombs would end the war.

The intelligence officer's professional interest will center on three aspects of the story. First, how the enormous secret was so well kept. The formal arrangements for security and press censorship are outlined in a separate chapter, which notes that a small staff for liaison with G-2 was sufficient until the decentralization of the War Department's counterintelligence forced the MED to create its own security organization to work closely with the FBI and the Office of Censorship. But throughout the book is illustrated the author's effort to achieve total security in depth of a kind best known from its postwar development in the USSR. The choice of "Manhattan Engineering District," with its misleading connotations, as cover name exemplifies his vigilance to avoid anything that might draw attention to the project. He emphasizes the controlling role of his personal judgment on the security of employees about whom doubts had been raised, as in the case of Robert Oppenheimer. His enforcement of real compartmentation is shown in his refusal to confirm the astute guess of Du Pont officials in charge of plutonium production at Hanford that the cover story put out after the Alamogordo explosion was just that.

How well the secret was in fact kept was shown by a postwar search of German intelligence files, which indicated an awareness only that the Americans were interested in uranium ore from the Congo and had twelve laboratories working on undetermined aspects of the program. The Russians,

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mounting a tremendous intelligence effort and enjoying much better access, learned somewhat more, but not so much as they might have without the U.S. counterintelligence program which recognized and met the Soviet offensive. General Groves barely touches on this.

A second intelligence aspect lies in the story of the effort to detect and counter the presumed German work on fission. Here we have a record of the development of modern methodology for attacking a scientific intelligence problem. Atomic intelligence was centralized in the MED because the armed service's intelligence organizations seemed unable to cope with scientific problems of such complexity. A central office was created to provide an administrative nucleus, liaison was established with the collection sections of G-2, ONI, the OSS, and British intelligence, and mechanisms were set up to bring the best scientific and technical competence available to bear on individual problems as needed.

The effort was marked by patient research to identify and locate German nuclear physicists and German-controlled industrial facilities suitable for an atomic project, the sabotage and later bombing of the Rjukan heavy water plant,¹ aerial surveillance of the Joachimstahl uranium mine, saturation bombing of targets like the Auer rare earth plant, covert operations against German nuclear physicists aimed at locating hidden research facilities and assessing their status, and finally the formation of teams code-named Alsos to find and interrogate first Italian, then French, then German scientists in the van of the Allied advance.² General Groves discreetly omits mention of an operation mounted far in front of the American lines, in an area the Soviet armies were to occupy, to seize the records of the Joachimstahl mine. Nor does he tell how the MED scientists developed the basic techniques still in use for analyzing radioactive debris for intelligence purposes.

¹ An account of the British-initiated sabotage operation was given by Knut Haukelid in *Spies Against the Atom* (London: William Kimber, 1954).

² For this story see also Samuel A. Goudsmit's *Alsos* (New York: Henry Schuman, 1947).

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The third matter of intelligence interest is the quasi-covert or at least unorthodox measures undertaken to control fissionable materials and know-how, reserving them for the exclusive use of the British, Canadians, and Americans. A chapter on the Combined Development Trust details the Anglo-American attempt to corner the uranium market and its sources. And several unconventional operations were undertaken to prevent materials and knowledge from falling into Russian or French hands: a stock of uranium ore which the Germans had seized in Belgium was whisked away from Stassfurt in front of the Russian armies; the main German research facilities were evacuated from the Hechingen area, in the French zone-to-be, while the French forces were advancing on it; and the principal German nuclear physicists—who had given up on a bomb but were working, still short of a self-sustaining reaction, on power applications of fission—were rounded up and interned together in a house in England until arrangements could be made to insure that none of them would offer his services to the East. General Groves now makes public excerpts from the tapes of these scientists' conversations during their internment—their conclusion that the Anglo-Americans were not clever enough to have bugged the house, their dissatisfaction with their treatment, their belief that the Americans were frantically trying to imitate their own progress with fission, their incredulity and puzzlement when the bomb was actually dropped, their efforts at self-justification.

Intelligence officers and others concerned with international collaboration will sympathize with the author's sense of frustration at the uncertainties of negotiations with the British, especially as aggravated by the personal diplomacy of Franklin Roosevelt and Winston Churchill. General Groves is particularly dismayed by the history of British liaison with French nuclear physicists in contravention of the Quebec Agreement and by the knowledge Joliot-Curie thus gained of the American process. His sole satisfaction in this business, he says, came from a complaint by Joliot that while the British had been most cordial and given much information the Americans would give him virtually nothing.

GERMAN OPERATIONS IN WORLD WAR II

I WAS CICERO. By *Elyesa Bazna* in collaboration with Hans Nogly. Translated from the German (F. P. A. Ferenczy and Kindler Verlag, 1961) by Eric Mosbacher. (London: André Deutsch. 1962. Pp. 192. 15/—.)

You approach with misgiving books that are obviously trying to climb onto the bandwagon of a best-seller, as Mr. Bazna disarmingly admits he is doing. Yet the Levantine valet's own story of how he photographed the official secret correspondence of the British ambassador in Ankara and sold it to the Germans for 300,000 pounds sterling over half a year's time is delightful reading. It is a far better book than the original *Operation Cicero* done by the passive, ponderous, and politically self-justifying case officer Ludwig Moyzisch—not to mention the cheapened movie and TV versions of this account—because Bazna was the only real actor in the operation, because he is a more interesting person than Moyzisch, and because he and his collaborator Mr. Nogly, with the help of three newspapermen, did a pretty thorough research job on all aspects of the case instead of rushing into print with a half-baked tidbit.

This research makes Bazna's intimately personal story also a well-rounded case history of the operation, including information from Moyzisch, from German Ambassador von Papen's later memoirs, from what Allen Dulles has had publicly to say of his learning in Berne about Cicero through German diplomatic correspondence, from the recollections of Cornelia Kapp, the neurotic OSS agent whom Moyzisch employed as secretary and called in his book "Elisabet" and whose flight terminated the operation, from interviews with a colleague of Moyzisch's who had mediated in the employment of this secretary and whose house had sometimes been used for meetings with Cicero, and from a contemporary confrontation between Bazna and Moyzisch. There remain some discrepancies, to be sure, among the various accounts—whether Moyzisch in his Opel eluded a pursuing car before or only after Cicero had tumbled out of the back door upon rounding a corner, whether the ominous code name Operation Overlord caught the eye of Cicero's camera early and repeatedly or

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only in its last peek in March of 1944, whether the Kapp girl was really flown to Cairo, as she says, and back to Ankara before being disguised in short black hair and a Wren's uniform—but these are unimportant in today's perspective.

What endears Cicero to the reader, for all his cupidity and unscrupulousness, is his amused debunking of his own pretensions and poses, whether assumed in pursuit of his ruthless strategy with women or in the effort to dignify his espionage with patriotic motivation. He also perspicaciously debunks the motivations of others, but he betrays a real respect and fondness for the British Ambassador he so deceived. He did acquire an authentic secondary motivation, nonmercenary if self-interested, when he was sent to the First Secretary's cellar to fix the furnace just after he had filched his first file of secret documents:

I struck the hot water pipes with my tools, and the sound echoed throughout the house. There could be no denying my industriousness. . . . I read what Churchill had to say. . . . No effort must be spared to persuade Turkey to enter the war in the following spring. That was what Churchill said. I struck the pipes a series of furious blows. Churchill could of course see the great historical issues, but all I could see was the prospect of wallowing in a muddy trench at the front, being an annoying obstacle in the path of some war-hardened and experienced German unit . . .

I also discovered . . . that a flood of weapons and war material was to flow into my country. "Specialists must be sought out who will teach the Turks to handle this material." I decided that for a start it would not be a bad thing if they got hold of a central heating mechanic to relieve the First Secretary of the British Embassy of having to depend on a Turkish ignoramus such as myself.

This book, if its author has told the whole truth, makes all the professional trappings of clandestinity look silly in showing how a valet executed one of the most sensationally successful espionage operations of the war all on his own, unaided and uncontrolled by the intelligence service he worked for. Without experience, training, or resources except his native Levantine instincts, he even laid down the operational procedures for his case officer. And certainly it makes both German and British counterintelligence in wartime Ankara look silly. The British, even after they discovered there was

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a Cicero, failed to suspect a servant who could afford to rent a house for successive mistresses and buy expensive clothes in the city's best shops. The Germans, aside from hiring an OSS agent, could not find out the name of a man who acknowledged that he was the British ambassador's valet, who apparently used his true name in that position, and who had previously worked for the Germans, as well as the Yugoslavs and Americans, under that name. So in 1950, when Bazna, still under his true name, was being prosecuted in the Turkish courts for innocently spending the forged pounds Moyzisch had paid him,¹ Moyzisch could write of him, "If he should be still alive, which seems unlikely in the extreme . . ."

This apparent ineptitude on the part of the professionals would be a little more understandable if Bazna in fact altered the name on his references in applying for the British job or if his credentials were forged with a pseudonym. And it would clear up the anomaly almost entirely if he had been an agent of the Turkish intelligence service all the while.

OPERATION BERNHARD. By Anthony Pirie. (London: Cassell. 1961. Pp. 236. \$5.)

It was a laudable idea to bring together in English all the loose ends of information about the Nazi Sicherheitsdienst operation that forged about half a billion dollars worth of British pounds (and toward the end some thousands of American dollars) and marketed most of this to finance intelligence operations, buy arms, and get hard currencies for foreign exchange needs. The main source for the story is Wilhelm Hoettl, who was closely associated with the operation from beginning to end and who published a book about it in 1955.² A score of other memoirs listed in Mr. Pirie's bibliography shed some side lights on the "greatest forgery of all time," there have been a few magazine articles based on the recollections of low-level participants, and in 1958 and 1959 the German illustrated weekly *Stern* dug into other details

¹ The product of Operation Bernhard. See the next following review.

² He used a pen name in the German edition but not in the English, respectively Walter Hagen, *Unternehmen Bernhard* (Wels, Austria: Welsermuehl, 1955), and Wilhelm Hoettl, *Hitler's Paper Weapon* (London: Hart-Davis, 1955).

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and in particular succeeded, where official British and American efforts had failed, in salvaging from the 250-foot bottom of the Toplitzsee a truckload of forged notes, plates, and SD records dumped there as the American Third Army overran the "Alpenfestung" where the Germans were to have made their last stand.

Mr. Pirie's consolidation, however, is a dreadfully unskillful and slipshod job. It is essentially an adaptation of the Hoettl book with bits from the other sources, mostly *Stern*, thrown in. Hoettl's account, although valuable historically, made poor reading for the Bernhard story because it was a composite of side-track excursions reviewing all the operations financed by or otherwise connected with the forged pounds, things ranging from the rescue of Mussolini and the Cianos to running a radio intercept setup, practically all operations with which Hoettl had anything to do; but at least Hoettl's participation and his viewpoint gave the book a kind of unity. This Pirie destroys by his interlarded bits told from the viewpoint of Ludwig Moyzisch or Alfred Naujocks or a minor officer and his girl who, because the author apparently saw possibilities in their romance, figure prominently if insignificantly in his version.

Moreover, he uses two most unhappy tricks to jazz up Hoettl's story. First, he puts everything he possibly can into invented dialog, setting even things like a description of the "false bottom" of the Toplitzsee, lifted from Hoettl, between quotation marks as the words of a diver. At the beginning of the book this vocalizing is jazzy indeed, with all sorts of colorful Cockney slang coming from the mouths of his German characters, but as his imagination tires it becomes flat and perfunctory. It is equally incredible either way. Second, the many operational case histories which Hoettl relates separately in turn Pirie chops up and shuffles together, trying to tell them all at once. So he leaves his hero suspended just beyond his girl's embrace to carry us a few paragraphs into a weapons deal with the partisans, but as soon as the negotiators are ambushed and dangling between life and death we're off to Berlin to hear about Heinrich Mueller's intrigues with Ohlendorf, and so on like a multi-ring circus.

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But that is not the worst. The worst is the liberties he takes with the facts Hoettl records, some out of fancy, apparently, some out of carelessness, and some out of deficiency in the German language. For example: A pseudo-inventor named Marconi whom Hoettl has coming to the attention of the German R&D people through a minor Bernhard agent becomes for Pirie the agent himself, and a coating of soot (German: *Russ*) which he had precipitated on the inside of a vial becomes "a brown rust-like substance." When Goebbels tells his propagandists to introduce references to the Alpenfestung into the neutral press, Pirie reads that they "might have come across the phrase in the neutral press." Hoettl writes of intercepted American messages from Bern:

The reports signed by Minister Harrison were most insignificant; it was a wonder that a man of his rank should pass on to the State Department every bit of purported information about Germany that came to him without any attempt at critique or evaluation. Other reports, however, were soon found to be remarkable for their well-weighed content and for their unusual [anti-Soviet] bias for those times. It could be established that these came from the head of the American OSS secret service in central Europe, Allan W. Dulles.

Mr. Pirie turns this into the following, preserving only the misspelled name:

Almost the only useless material monitored came from the United States diplomatic mission to Switzerland, reports from which to Washington contained practically nothing but rehashes of propaganda material issued by Allan Dulles, head of the American Secret Service.

Hoettl used true names throughout except for himself and one Scandinavian agent. Pirie uses neither Hoettl's now well-known true name nor his pen name, but makes up a third for him, so he has a transparently fictitious Willi Holten as the central character of his book. And the man to whom Hoettl gives much credit for having originally set up the marketing system for Bernhard pounds, Wilhelm Groebel, killed in 1943, Pirie incomprehensibly baptizes Willi Froeben. He subtracts from the year of Schellenberg's death, 1952, the year of his birth, 1910, and concludes that he died at 48.

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In short, the book is neither good reading nor reliable. The fact that it has an index and bibliography of sorts might make it useful as a first-stage reference in getting back to good sources. It has some nice photographs furnished by *Stern*. And the records of the Sicherheitsdienst it notes were fished from the Topfitzsee in 1959 and describes only as containing "details of its most daring achievements in sabotage, spying, and numerous other activities" should be useful for historical and perhaps counterintelligence purposes if they are available and as represented.

MISCELLANEOUS

KONTAKT MED ENGLAND 1940-1943 and HEMMELIG ALLIANCE 1943-1945. By Jorgen Haestrup. (Copenhagen: Thaning og Appels Forlag. 1959.)

Here is a chronological analysis of the Danish underground movement during the Nazi occupation unique in its scholarship, objectivity, and comprehensive treatment. Aided by redoubtable Danish historians and archivists, the author has collected and researched a remarkable quantity of authentic source material and documentation, meticulously and impartially screening it to establish a factual historical record. The resulting account of the Danish resistance, covering practically all phases of its intelligence and other clandestine activity, is so replete with checked and double-checked detail that it may lack appeal for the general public. For the serious student of unconventional warfare in a limited denied area, however, the books offer a wealth of worth-while lessons. Their complete picture of that period some twenty years ago when unconventional warfare was for the first time developed on an international scale through trial and error is extraordinarily pertinent to the problems that face the intelligence officer today.¹

In 1940 the embryo Danish resistance to Nazi occupation was an organized secret intelligence effort, conducted by professional officers of the subjugated armed forces of Denmark. Its main initial objective was to re-establish contact across closed and guarded frontiers with Danish citizens in neutral Sweden and belligerent England. Adequate contact was in fact established at such an early date that the British Spe-

¹ For two papers in English by Dr. Haestrup, probably the outstanding historian of the Danish Resistance, see his text published in *European Resistance Movements 1935-1945* (Oxford: Pergamon Press, 1960, pp. 150-162), a paper delivered at the First International Conference on the History of the Resistance Movements, and *Denmark's Connection with the Allied Powers During the Occupation*, a paper delivered at the Second International Conference on the History of the Resistance. A popular history of the Danish resistance is contained in *The Savage Canary* by David Lampe (London: Cassell and Company, 1967), published in the United States as a paperback under the title *The Danish Resistance* (New York: Ballantine Books, Inc., 1960).

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cial Forces were not yet organized to handle requests for assistance from inside occupied Europe and America was still not in the war. The Danish intelligence officers and their collaborators abroad nevertheless went ahead with their across-the-board organization, constantly casting about meanwhile for the right Allied connections at all echelons. Among themselves they established channels through which messages, material, and personnel moved regularly under conditions of maximum security.

During this period their clandestine communications between Denmark and England via neutral Sweden—whence there was access to Germany—were of considerable intelligence value to the Allies. It was well before the Danish population developed a will to resist that Stockholm became the meeting place for intelligence officers from London and Copenhagen.

When popular demand for unconventional action against the German occupation forces gathered momentum, both the British and the Danish intelligence people opposed cooperation with the activists. The UK's Secret Intelligence Service shied away from the Special Operations Executive, now authorized for purposes of covert action and in the early stages of activation. Professional Danish intelligence operators similarly steered clear of the up-and-coming resistance cadres. They were not about to have their capabilities compromised by the uncoordinated efforts and hazardous activities of amateurs.

This conflict of basic interests is described in interesting and factual detail, along with the parallel conflicts among the activists themselves—the many behind-the-scenes organizational squabbles and shenanigans between the indigenous resistance workers and their SOE would-be supporters. Initially the SOE efforts were so inadequate and so disastrous that the entire budding underground became discouraged and disgusted. There was an almost complete loss of confidence in the intentions and competence of the unconventional warriors in London and elsewhere abroad.

As methods, techniques, and general know-how improved confidence was restored, however; and much later, towards the end of the war, it was also realized and proved that good

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intelligence creates effective covert action just as surely as good covert action produces a wealth of worth-while intelligence. Finally the two were unified in a closely coordinated effort under the same leadership, with remarkable results.

The geographical size and social organization of Denmark made it an exceptionally difficult place to carry out militant resistance operations. Mr. Hastrup makes the useful point that the Danish Communist Party got off to a good start before anyone else for the simple reason that the Communists in any case function in secrecy and under routine operational discipline. The Danish Communists received no assistance from the Soviet Union, however. Attempted approaches to Moscow showed that the Russians were remarkably ignorant of conditions in occupied Denmark and far too busy with their own war anyway. In due course the Communist cadres, working closely with cadres from the intelligentsia in the cities and in rural areas, became invaluable in the massive sabotage operations for which the Danish underground became famous in Europe.

Of particular interest is the description of the formation of the Danish "Freedom Council," composed of national leaders of consequence and integrity. This secret group of top-level executives, politicians, and intellectuals actually functioned as the supreme command of all resistance. They were practical executives who managed to set up exceptionally efficient across-the-board operational management. Their identities were a carefully guarded secret, but they exercised complete control over all underground cadres regardless of political or professional affiliations. No acts of sabotage were carried out unless specifically approved and ordered by the Council. In addition, the Freedom Council eventually handled or supervised all clandestine contacts with the Free Danes outside Denmark, as well as with all echelons of the Allied war effort in any way connected with the situation in occupied Denmark.

After a cumbersome, painful, and almost hopeless beginning, the Danish underground thus achieved excellent and profitable results against the Nazi invaders. After the German surrender only token Allied forces moved into Denmark, and the Freedom Council maintained control until law and order were soon restored through genuine democratic pro-

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cedures. These books contain monumental evidence that the keys to success in large clandestine operations are, first, competent leadership, and second, operational discipline.

THE GUNS OF AUGUST. By Barbara W. Tuchman. (New York: Macmillan. 1962. Pp. 511. \$6.95.)

In this book—"must" reading for historian, intelligence officer, and layman alike—Mrs. Tuchman has, to use Sherman Kent's phrase, broken off "a significant fragment of the human past" and examined it closely. Her 440 pages of actual text are a gripping account of the first 30 days of World War I, set against background material on the war's outbreak which gives the reader a measure of understanding of why events unfolded as they did. As history it is a new contribution, for all the extensive existing literature on World War I: if events of the past can be more meaningfully or interestingly related than before, the old becomes new.

For those who read for literary pleasure this is a well-told tale. Mrs. Tuchman's style, in my opinion, approaches that of Churchill, Catton, or Kennan. Her pages are studded with fine descriptions such as these:

The muffled tongue of Big Ben tolled nine by the clock as the cortege left the palace, but on history's clock it was sunset, and the sun of the old world was setting in a dying blaze of splendor never to be seen again. (p. 1.)
Thereafter the red edges of war spread over another half of the world. (p. 161.)
... or whether all along beneath his bold words and manner the natural juices of courage had been invisibly drying up . . . (p. 218.)
At thirty-two, the imperial scion was a narrow-chested, willowy creature with the face of a fox . . . (p. 238.)

She copes equally well with the dynamics of personalities, giving particularly good insights into those of the Kaiser and Generals von François, Sir John French, Foch, Gallieni, Joffre, Kluck, Lanrezac, von Moltke, and Henry Wilson. She has also the ability to make battles live again. Her descriptions of troops "in dust, heat, and discouragement and fatigue beyond telling" engage the reader almost as a participant.

For the intelligence officer *The Guns of August* has all the attractions it offers the student of history and the pleasure

reader and many besides. History differs from estimative intelligence only by point of reference in time. Identifying and analyzing the forces at work in international affairs and providing information and judgments are intelligence functions. When this is done for the past, with the advantage of hindsight, it becomes history. Like Churchill's *The Gathering Storm* for the period before World War II and Bruce Catton's *The Coming Fury* for that before the Civil War, this is an artistically executed analysis of events of world importance and the role played by certain men and nations in the evolution and devolution of these events.

The book is replete, moreover, with examples of intelligence successes and failures, both tactical and strategic. The failures are attributable to a variety of causes—lack of information, available information not transmitted, information transmitted but not received, information received but overlooked or misinterpreted, and even information correctly interpreted but deliberately disregarded. But some of the major failures resulted at least in part from the fixation of both sides on plans developed well in advance of hostilities—the Schlieffen Plan for the massive German drive through Belgium and the French Plan 17 calling for a smashing attack through the weakened German center, cutting the swollen right wing off from its communications.

The planning had been detailed beyond belief. Churchill wrote of it that for each of the twelve million men who were to lock in mortal combat, "all had been worked out to the minutest detail . . . Only his grave was lacking; but graves do not take long to dig"; and he pointed to the accumulation of "terrible ifs" and "imponderabilia" in relying on plans and concluded, "All these calculations are so disturbed by unknown and unknowable factors that they ought not to be taken as more than a rough guide."²

The violation of Belgian neutrality had the grossest kind of adverse strategic results for the Germans, none of which had been anticipated because the basic German estimate of Bel-

² *The Great War*, Vol. 1, p. 84.

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gian reaction was in error. This also had its impact on the tactical situation. As Mrs. Tuchman points out:

On their part the Germans, believing the Belgians would yield to the ultimatum or at most offer a token resistance, had not brought up the surprise weapon they had in store in the form of gigantic siege cannon of such size and power that it had not been thought possible such guns could be made mobile. (p. 166.)

French reaction was also misestimated. Moltke and his staff had expected that Joffre would bring up his main forces on his left to meet the threat of the German right wing. When they saw no evidence of French movements west of the Meuse and the French attack began in Lorraine, three days of discussion between Rupprecht's headquarters and GHQ still failed to resolve the question of whether this was the main French effort. The Germans were faced by "that vexing problem of war presented by refusal of the enemy to behave as expected in his own best interest . . ."

But the French had similar difficulties. "Lanrezac bombarded GQG with reports from his own reconnaissance of German units which indicated a mass pouring through on either side of Liège . . . GQG insisted the figures must be wrong" (p. 209). Although it was Grand Quartier Général that was wrong, General Lanrezac was later sacked; his "sin was in having been right, all too vocally" (p. 417).

On occasion the need for information was known and a capability to get it existed but was not used. Once when Lanrezac—and the British—needed information about the enemy's units and line of march, Sir John French refused to release for this task fresh British cavalry units that were available (p. 220). There were breakdowns in communications, as when Samsonov's VI Corps marched in obedience to orders which had been cancelled (p. 297). Information was withheld from higher authority; in one instance GQG failed to pass on information that would have spared the French Government moving out of Paris (p. 406). Sometimes lack of coordination was the fault, or stubborn adherence to decisions reached on the basis of earlier intelligence, as when General von Kuhl suppressed doubts that the French were beaten because "all orders for the new movement had already been given" (p. 419). Or the significance of events plainly observed

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was missed entirely; a Captain Lepic witnessed the historic swerve of the German column away from Paris toward Compiègne but was "more interested to report that the Uhlans had discarded their distinctive helmets and were wearing cloth caps" (p. 402).

For every intelligence failure there was an intelligence success (often the reverse of the same coin). Most outstanding was the German interception of Russian orders sent by wireless during those first thirty days. General Rennenkampf's order of August 20 for the Russian corps commanders to halt was sent "in a simple code which a German professor of mathematics attached to the Eighth Army as cryptographer had no difficulty in solving" (p. 274). On August 24, the Germans intercepted Samsonov's orders for the next day. On the next day, in the prelude to the Battle of Tannenberg, even more valuable messages were intercepted—these sent in the clear—giving marching distances for the First Army which revealed that it would not move far enough to threaten the Germans from the rear. In Mrs. Tuchman's words, "No such boon had been granted a commander since a Greek traitor guided the Persians around the pass at Thermopylae" (p. 291). The only problem was whether such ill-protected information could be believed. It could, and it was, with great loss to the Russians.

The book's references to such intelligence episodes, for the most part brief, could many of them be elaborated into individual case histories, each carrying its own lesson. Mrs. Tuchman's list of sources (pp. 441-455) and her notes (pp. 457-490) would be of substantial help to anyone undertaking such a task. The central lesson of the whole is a simple one: not by over-planning, but by over-reliance on plans, decision-makers, whether statesmen or commanders, decrease their chances of making what Descartes called the "proper choice in every contingency of life."

Intelligence is in any case likely to be left in the position of offering its wares with the uncomfortable knowledge that happenstance and miscalculation will continue often to combine weirdly to surprise the decision-maker. So much can be learned by listening to the echoes of decisions past.

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CLOAK AND CIPHER. By Dan Tyler Moore and Martha Waller. (Indianapolis: Bobbs-Merrill. 1962. Pp. 256. \$4.50.)

While the topic of codes and ciphers has built-in reader interest, it is difficult to pin down the type of audience to which a historical book on the subject should be addressed. The puzzle addict is interested solely in the making and breaking of codes and ciphers; he is usually indifferent to the underlying plain text and the circumstances surrounding the usage of the cryptographic systems. The amateur historian or student of military campaigns, on the other hand, is interested in the fact that codes and ciphers were associated with an event but cares little about their analysis.

This book tries to reach both types of reader, and it thereby suffers from the faults one might expect. It is an equal mixture of popularized history and oversimplified cryptography and cryptanalysis which has appeal only for a casual reader or dilettante in either field. The Zimmermann telegram and the activities of British Admiral Hall in World War I, for example, have been dealt with extensively elsewhere,⁵ and the discussions of these subjects here contribute nothing to the literature on them. Similarly, although the treatment of how codes and ciphers are constructed is good, the exposition of the cryptanalytic methods employed to break them is amateurish and not very informative. One chapter, headed "How to Fracture Poly" (polyalphabetic substitution ciphers), contains a typical statement: "... with a lot of perseverance and a little luck, the meaning can be worked out on the basis of letter frequencies."

The book might serve the useful purpose of stimulating further interest on the part of a reader who has no previous knowledge of the subject. To this end, it would have been good if the authors had not omitted the provision of a bibliography for further reading in depth. One reaches the reluctant conclusion that they have not quite lived up to the claim on the dust jacket: "*Cloak and Cipher* is the first book of its kind written for the adult market, and a welcome relief

⁵See the bibliography *Public Texts in Intelligence*, Intelligence Articles V 2, p. A51.

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from the oversimplified books on codes and ciphers available in the past."

THE SELF-MADE VILLAIN: A Biography of I. T. Trebitsch-Lincoln. By David Lampe and Laszlo Szenasi. (London: Cassell. 1961. Pp. 215. 21/-.)

Many books of self-aggrandizement have been written by real or self-styled secret intelligence agents since Matthew Smith first broke into print in 1699.⁴ Rarely, however, has the writer been such a faker and con-man as Ignatius Timothy Trebitsch-Lincoln. In addition to countless articles glamorizing himself in the press, he wrote two fabricated autobiographies, *Revelations of an International Spy*⁴ and *The Autobiography of an Adventurer*.⁵ His cause was also furthered by biographies entitled *Trebitsch-Lincoln*; *Le Plus Grand Aventurier du Siècle* by Imré Gyomai⁷ and Maurice Laporte's *Buddha contre l'Intelligence*. Now the whole Trebitsch-Lincoln legend has at last been placed in its real perspective in this readable biography.⁸

The subject of these works was born in a small Hungarian town in 1879. At the age of 18 he stole his sister's gold watch and left the country. In Hamburg, he forsook his Jewish religion to join an Irish Presbyterian mission to the Jews, which eventually took him to Canada. There he was ordained a deacon of the Anglican Church. In 1904 he went to England and was given a curacy. In 1910, having left the ministry and become a British citizen, he managed to get himself elected to Parliament. During his incumbency he became involved in a pipeline operation in Poland, overextended himself financially, went bankrupt, and did not run for re-election.

⁴*Memoirs of Secret Service*. London, 1699.

⁵New York: Robert M. McBride & Co., 1916.

⁷New York: Henry Holt and Co., 1932.

⁸Paris: Les Editions de France, 1939. Of this biography, Lampe and Szenasi say that it "does prove that its author was an excellent writer of fiction."

⁹Variants in his name are a source of bibliographical confusion. Originally Ignatz Trebitsch, he anglicized it early in his English residence to Ignatius Timothy Trebich (sometimes Tribich) and added the surname Lincoln. He signed himself I. T. T. Lincoln, but history continues to refer to him as Trebitsch-Lincoln.

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His financial ups and downs reaching a climax shortly after the outbreak of World War I, Trebitsch-Lincoln came to the point of forging certain letters, notes, and signatures to cover his obligations. Shortly thereafter he devised a scheme whereby the British Navy might destroy the German fleet and tried to sell it, along with his services as a secret agent, to the War Office's Counter-Intelligence Division. He was turned down, but, still determined to make the money he so desperately needed by espionage for Britain, he went to Holland and came back with purported German secret codes and other information. This still did not net him the desired employment, only a complaint that the codes did not fit any German messages of which the British were aware.

Finally, Trebitsch-Lincoln took himself to the Admiralty and tried to see the First Lord, Winston Churchill, himself. He did succeed in getting three interviews with England's great Director of Naval Intelligence, Captain William Reginald Hall, who had actually had him under surveillance for some time. His demands for pay for the work he had done in Holland and for a permanent assignment as an intelligence agent were both turned down, and it was revealed that Hall knew he had forged a friend's signature to obtain money.

Our "hero's" passport valid now for only three more days and a second forged note coming due in two, he boarded a ship for the United States, bearing with him a hatred for Great Britain which he never lost. A few months later he wrote some articles for the New York *World* under the title "Revelations of I. T. T. Lincoln, former Member of Parliament, who became a German Spy," which, like many other things he wrote before and since, contained very little truth but which disclosed his desire to get even with the England he had left forever. The articles, however, brought his arrest for forgery at the request of the British Government.

In prison during the extradition proceedings, he offered to decode German secret documents for his American captors, and some intercepted German messages were actually sent him from Washington. He made little progress on them, but the privileges he wangled on the daily trips from his cell to a working office, including stops at restaurants and bars, gave him an opportunity to escape. During a period of hiding in

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New Jersey, he visited the office of the New York *American* and gave them an exclusive story of his activities. He also got ready for the publishers his *Revelations of an International Spy*, proclaiming that "the British Secret Service knows something of my past, and they are positively afraid of me." But in time he was recaptured, returned to Britain, and imprisoned on the forgery charge.

When he was released he went to Germany and became deeply involved in the postwar Kapp Putsch, even trying to enlist the exiled Kaiser in the movement. After a variety of other schemes and activities in Europe he moved to the Far East. Becoming an ardent Buddhist, he served as a political adviser to a series of Chinese war lords. There were rumors at the start of World War II that he had broadcast propaganda for the Japanese. In 1943 he died.

Trebitsch-Lincoln's own works, the two biographies by others that tend to support them, and the occasional cropping up of his name even in books on intelligence services had created a danger that newcomers to the field of intelligence history might believe the story had some modicum of truth. It is good to have this ghost laid to rest as authors Lampe and Szenasi have done.